Scottish & Southern Electricity Networks

TRANSMISSION

Scottish Hydro Electric Transmission plc

CLASH GOUR WIND FARM CONNECTION

LT264

Appendix B

Species Protection Plans (SPPs) and General Environmental Management Plans (GEMPs)

The following Species Protection Plans (SPPs) are included:

- Badger
- Bats
- Red squirrel
- Bird
- Pine marten
- Wood ants

The following General Environmental Management Plans (GEMPs) are included:

- Oil storage and refuelling
- Soil management
- Working in or near water
- Working in sensitive habitats
- Working with concrete
- Waste management
- Private water supplies
- Forestry
- Dust management
- Biosecurity on land
- Restoration
- Bad weather

Scottish & Southern Electricity Networks

TG-NET-ENV-501

Safety, Health and Environment

Badger Species Protection Plan

	Name	Title
Author	Francis Williams	Environmental Project Manager
Checked by	Alistair Watson	Environmental Advisor
Approved by	Richard Baldwin	Head of Environment

Contents

Scottish & Southern Electricity Networks

1 Introduction

Badger is a protected species under the Badger Protection Act and is afforded a high level of protection in Scotland. This Protection Plan provides guidance and agreed procedures for the protection of badgers and their shelters during construction works on SHE Transmission projects. The Plan contains two parts and details the procedures that must be followed where there is potential for badger to be present (Part 1), and where a Project Licence for badger has been issued by SNH to cover the project (Part 2):

1.1 Part 1: General Protection Plan

This Part applies to all projects where badger may be present). Part 1 outlines the responsibilities of SHE Transmission and the *Contractor* regarding protection of badger. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation.

1.2 Part 2: Project Licence Protection Plan

This is provided to *Contractors* in addition to Part 1 for large projects where a Project Licence has been issued by SNH to cover the work and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require a Method Statement to be submitted to SNH for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in **Error! Reference source not found.**, below should be used in conjunction with this document

Table 2.1- Miscellaneous Documents

Title
The Protection of Badgers Act 1992
https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing
SNH's "Scotland's Wildlife: Badgers and Development (2001)"

3 Part 1: General Protection Plan

3.2 Background

Badgers (*Meles meles*) are members of the weasel family with a very widespread distribution in Scotland. They normally live in small family groups (clans) in sometimes large underground structures called setts. Setts

are closely associated with woodland and sloping ground, but badgers can exploit many diverse types of habitat including upland moorland. Although they typically consume large numbers of earthworms, they are omnivorous and will forage on a wide variety of foods including grains and carrion. The distance from the sett which they travel varies widely, with those in upland areas having to exploit large areas. Four kinds of setts are recognised – main, annexe, subsidiary and outlier although badgers are also known to use above ground nests and rock crevices.

The badger breeding season is generally acknowledged to run between 1st December and 30th June with cubs born in February.

Signs of badger:

- Dung heaps or latrines – small pits are dug and large faeces of variable consistency are deposited. Dung tends to have an inoffensive odour.
- Badger prints and tracks – badger paths are often well worn and lead from setts to and along boundaries such as fences. They may be marked at strategic points with dung heaps where they constitute the edge of a home range. Badger prints are about 4.5 – 6.5 cm wide and have five toes with very prominent claws.
- Guard hairs – stiff, long, elliptical, hairs with black and white bands.
- Setts – typically large D-shaped burrows with large spoil heaps of excavated soil often with discarded bedding mixed in.
- Snuffle holes – indentations in the ground where badgers have been rooting for food such as bulbs and invertebrates.

3.3 Responsibilities

It is the *Contractor's* responsibility to comply with all the requirements of this Protection Plan where badger may be present, and it is both the *Contractor's* and SHE Transmission's responsibility to monitor compliance with the Protection Plan. The responsibility for applying for any Licence, including a Project Licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.4 Legislation

Badger is protected under The Protection of Badgers Act 1992. Under this Act it is illegal to intentionally or recklessly[1] damage a badger sett or cause a dog to enter a sett, to obstruct access to a sett and to disturb a badger while occupying a sett, or for any person to kill, injure or take a badger. It is also an offence to cruelly ill-treat a badger, to dig for or to snare a badger.

[1] Reckless acts would include not having or disregarding a mitigation plan aimed at protecting badgers resulting in killing, injury, and/or disturbance of any badger or badger resting place, or carrying out an activity which would result in an offence where the presence of badger was foreknown.

This legislation means that badgers are fully protected in Scotland. Under Section 10 (1) of The Protection of Badgers Act 1992, Licences may be granted to interfere with a badger sett within an area specified in the Licence by any means so specified.

3.5 Surveying for Badger

Surveys for badger must be undertaken in all works areas containing suitable badger habitat, a maximum of 12 months prior to the works commencing, (this includes site investigations), to ensure the availability of up-to-date information on shelter locations. A preconstruction check should also be made of works areas a maximum of three weeks prior to the start of works, to check for any changes to sett location / status.

Surveys must extend for a minimum of 30 m beyond working areas, including access tracks increasing to 100 m in areas of potential high noise and vibration (piling, blasting, etc.) for high noise activities.

The preconstruction surveys will be carried out by suitably qualified and experienced ecologists who will identify whether the setts are Active, Inactive or Defunct.

- Active - the presumption in Scotland is any suitable site that could be used for shelter in active badger territory is considered an active sett unless proven otherwise, through a lack of supporting evidence of current use, and by appropriate monitoring.

- Inactive - these can be characterised by tunnels looking disused (e.g. cobwebs and overgrown vegetation / leaves in the entrance) and no presence of signs of current use by badger (e.g. hairs, footprints, snuffle holes etc.). Appropriate monitoring is required to provide absolute certainty that the sett is not in current use by badger.

- Defunct - these are characterised by a loss of the structural integrity of the tunnel entrance (such as when they have been trampled by cattle) and/or roots growing through the tunnel, (i.e. the hole could not be used for shelter by a badger in its current state), and no other signs of current use by badger being present

Appropriate monitoring (e.g. the use of suitable camera traps) should be undertaken where required to determine if any sett is being used for breeding. Camera trap monitoring may also require a Licence from SNH.

3.6 Review of Badger Survey

Once a badger survey has been carried out, the ecologist / ECoW should review the survey results, apply the mitigation hierarchy outlined below and decide if a Licence is required (either Individual or Project) for the works.

Construction teams should be advised of existing / new constraints, together with mitigation and licensing requirements by the ecologist / ECoW.

Relevant site documentation and project information sources should be updated with new and amended information on badger constraints as it is produced, with changes communicated to appropriate staff immediately.

3.7 Mitigation Hierarchy

There is a general presumption against works being carried out which could disturb badgers in their setts or to destroy / exclude any sett. A hierarchical approach to mitigation of Avoidance - Disturbance - Destruction will be applied to any sett that may be affected (See Figure 1):

Avoidance

This is the preferred option for active / inactive setts identified within 30 m of works (or 100 m for high noise / vibration activities), an initial protection zone of either 30 m (or 100 m) will be marked on the ground and appropriately signed to restrict work access.

Protection zones must be maintained until works are completed. Site staff should be briefed of their purpose through a Toolbox Talk and works micro-sited outwith the protection zone. If badger disturbance can be avoided in this way, there is no need to obtain a Licence from SNH for the works.

Disturbance

For any works required within 30 m of active setts, and for high noise / vibration activities such as pile driving or blasting within 100 m of setts, a Licence from SNH will be required (either Individual or Project).

Individual Licence applications to SNH should be accompanied by a Species Protection Plan which outlines how disturbance will be minimised and setts protected, for example through screening of works and modifying protection zones.

If a Project Licence is in place, and a breeding sett will be disturbed during the breeding season (1st December – 1st July), a Method Statement must be submitted to SNH licensing team for written approval in accordance with Part 2 of this document, prior to any works commencing.

Destruction

Destruction of setts should only be undertaken as a last resort. For destruction of active setts a Licence will be required from SNH (either Individual or Project) Individual Licence applications to SNH should be accompanied by a Species Protection Plan which outlines how disturbance will be minimised and individuals protected.

The plan should include appropriate monitoring to ensure breeding is not taking place and provision for the creation of an artificial sett if required. Any sett subject to works under Licence will be monitored during and after those works. If a Project Licence is in place, a Method Statement must be submitted to SNH licensing team in accordance with Part 2 of this document for written approval prior to any works commencing.

3.8 Mitigation Measures

3.8.1 General Mitigation

- Any temporarily exposed pipe system should be capped when staff are off site to prevent badgers from gaining access.
- All exposed trenches and holes should be provided with mammal exit ramps e.g. wooden planks or earth ramps when Contractors are off site.
- An emergency procedure should be implemented by site workers if badger / badger setts are unexpectedly encountered. All work within 30 m (100 m for high noise/vibration activities) should cease until a suitably qualified and experienced ecologist has inspected the site and determined the appropriate course of action.
- An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH licensing team if required).

3.8.2 Monitoring and Reporting

- The Environmental Representative will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to badger is delivered.
- Reports will be submitted to SNH as required by the relevant Licence.

3.8.3 Exclusion / Destruction of Inactive Setts at any time of year

Where there is a structure that requires to be excluded or destroyed which may be used by badger, a survey to determine whether the feature is in active use is required to determine whether a licence. For guidance see the SNH website (https://www.nature.scot/sites/default/files/2017-07/A1391121%20-%20Badgers%20-%20Current%20use%20-%20Guidance%20-%204%20September%202014.pdf).

Should the structure be deemed to be inactive the following methodology will be incorporated into a Site Specific Method Statement and issued prior to work commencing. A licence from SNH is not required.

Monitoring

a. Any potentially inactive sett must be monitored for a minimum of 14 days where weather conditions are favourable (up to 28 days if unfavourable) to check for current use by badger.

b. A combination of the following methods will be used, as appropriate:

- An appropriately positioned camera trap to monitor badger activity at the sett.
- Small pencil-sized sticks placed in the floor of the tunnel just inside the entrance(s), pointing upright.
- Checks for other badger sign (*e.g.* hair, snuffle holes, latrines and fresh scuff marks).
- Sand placed at the sett entrance(s).

Exclusion

c. Following adequate monitoring, and where the named Agent is confident that there is no sign of use by badger, the sett will be excluded for 7 days using a gate[2] set in the one-way position.

d. Exclusions must be overseen by a named Agent on the Project Licence.

Monitoring Exclusion

e. The sett will be visited regularly through the exclusion process to check activity and to check on the integrity of the exclusion materials and make good any damage. If it is apparent that badger(s), or other animals, have breached the exclusion any necessary repairs will be made and exclusion period will be restarted.

Exclusion / Destruction of the Sett

f. Following exclusion, temporary blocking by wiring the gate shut, or destruction of the sett will be undertaken, where required, under the supervision of the Agent.

g. Where the sett is not required to be destroyed the exclusion gate / sheeting may be left whilst works proceed around the sett and removed once works have finished.

h. Where the inactive sett is required to be destroyed, this will be carried out using appropriate plant or hand tools.

i. For setts on distinct slopes, the excavation will start at least 1 m away from the entrance spoil heap on the down-slope side (up to 4-5 m in front of the entrance itself). For setts on flat ground the excavation will start in front of the entrance hole and hand digging will be utilised to assess the direction and number of tunnels in all directions. Once this has been established a appropriate plant can be used to further progress the excavation. A trench will be dug under direction of the Agent. In the unlikely event that badgers are found during this process all excavation will cease and the badger(s) will be allowed to freely move away from the area. The Agent / ECoW will decide on when the excavation can re-commence.

j. The excavation will continue slowly, working forwards into the tunnels and chambers until the Agent is satisfied the entire sett has been excavated. Once fully excavated the soil will then be backfilled and compressed to deter animals from excavating further holes.

k. Construction works will be programmed to commence as soon after this process as possible to reduce the probability of animals returning to the area.

3.9 Licensing Requirements

Licence applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 40 days) to ensure the licence is in place prior to any work commencing.

[2] The specification of gates, fencing and materials would be in accordance with DMRB and the Natural England Technical Information Note 25 (Appendix 2). The badger mesh fence specification is as described in SNH's "Scotland's Wildlife: Badgers and Development (2001)".

3.10 Project Licence

An SNH Project Licence is likely to be the most appropriate form of Licence for any large scale and / or long running Project, which may result in a large number of minor unavoidable badger offences.

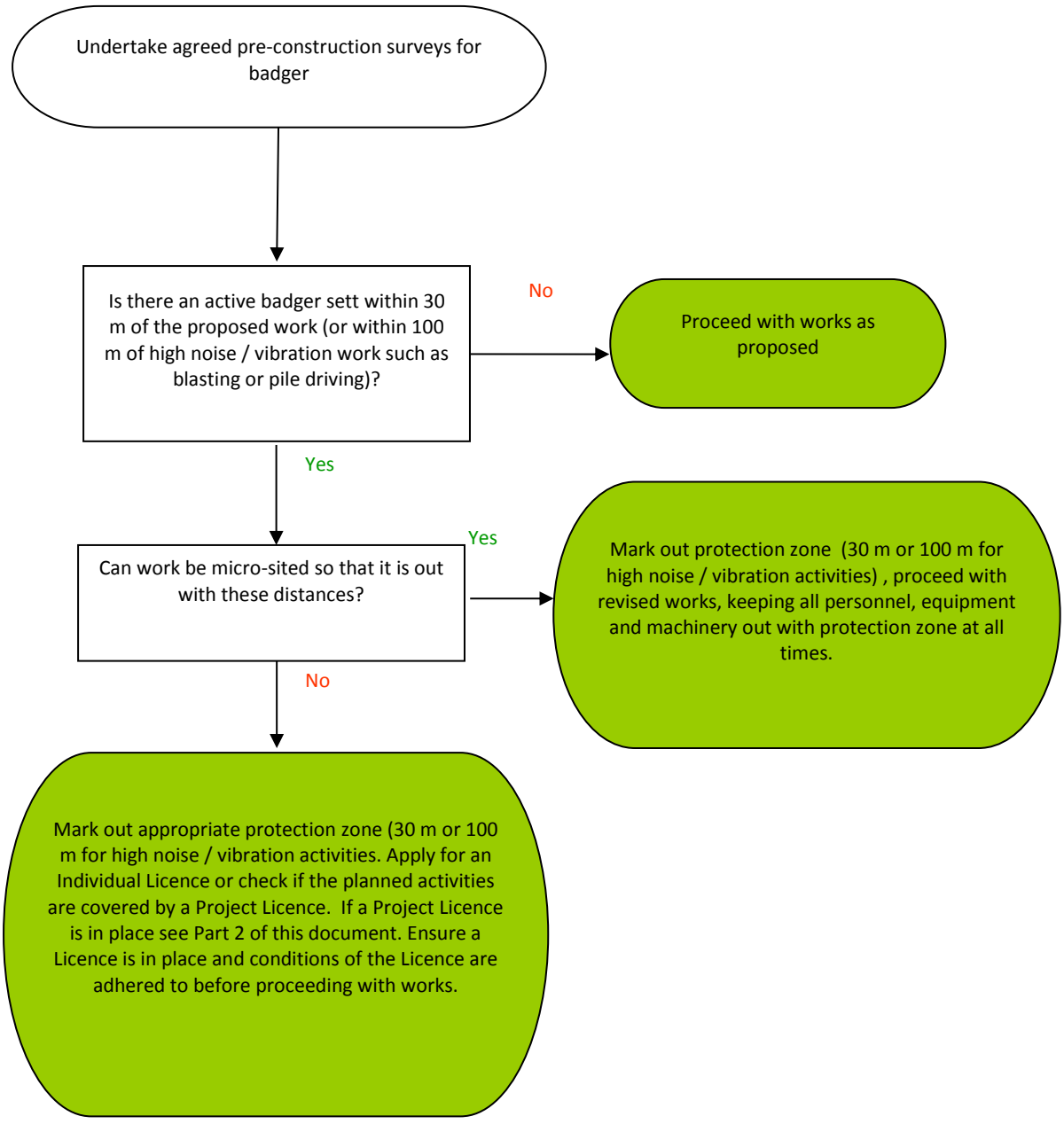
For example, multiple instances of disturbance to a number of badger setts over several years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency across the project area and throughout the Project's lifespan. Project Licences do not negate the need for thorough pre-development surveys within 12 months of the planned project start date, and pre-construction surveys within 3 weeks of works commencing. Any Project Licence application will need to be accompanied by the Mitigation Plan and procedures for badger included in Parts 1 and 2 of this SPP

3.11 Individual Licence

For small scale Projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable badger offences an Individual SNH Licence is most likely to be appropriate. Licence applications should be accompanied by a Method Statement and should be sent sufficiently in advance of the Project start date to ensure the licence is in place prior to work commencing.

Further guidance and details of how to apply for a badger Licence can be found on the SNH website (https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing).

Badger Mitigation Decision Tree



4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with the Project Licence (insert Licence number) and its conditions.

As stated in the Project Licence, methodologies for certain mitigation activities permitted under the Licence are included in this Part of the SPP. More disruptive activities, listed in Section 1 below, will also require a specific Method Statement to be submitted to SNH licensing team for written approval (see Appendix A). It is the *Contractor*'s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

4.1 Works Allowed under the Project Licence

Under the Project Licence there is a general presumption against works being carried out which could disturb badgers in their setts, or to destroy / exclude any sett unless it can clearly be demonstrated that either it is inactive (*i.e.* through monitoring) or that there is no alternative solution against Project timescales and requirements.

4.2 Activities requiring an SNH Approved Method Statement

The following activities require a formal Method Statement to be submitted and approved by SNH prior to any works commencing:

a. Destruction of any active setts within the breeding season (1st December – 30th June inclusive).
b. Destruction of a breeding sett, or a sett which cannot be discounted as a breeding sett, at any time of year.
c. Disturbance (*i.e.* works within 30 m, or 100 m for high noise / vibration works) to a breeding sett, or a sett which cannot be discounted as a breeding sett, during the breeding season.
d. Where it is proposed to exclude (even temporarily) such a proportion of setts in a given clan's territory as to cause a significant impact on the clan.
e. Any exceptional circumstances not covered in this SPP.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the *Contractor / Named Agent* for all submissions.

Proposed mitigation works should be agreed with SNH.

4.3 Activities not requiring additional SNH approval

The following works may be carried out under this SPP and / or specific Method Statements without the prior approval of SNH when a Project Licence is in place, using the prescribed methodologies:

4.3.1 Exclusion / Destruction of a non-breeding active sett from July – November inclusive

The following methodology will be incorporated into a Site Specific Method Statement and issued prior to work commencing:

Pre-works Assessment

a. In advance of any ground-breaking or use of construction machinery within 30 m of a sett entrance (or 100 m for blasting operations) an Agent on the Project badger licence will consider in detail the scope of the proposed works, type of sett and topographical location to determine if exclusions can be avoided without placing badgers at risk.

Exclusion

b. As agreed with SNH, badger gates and appropriate materials[4] will be used for the exclusion of setts, unless in rare circumstances, in which case SNH licensing team will be consulted beforehand. Exclusions must be overseen by a named agent on the Project badger licence.

c. The gate would be set to the two-way position for at least 7 days and then set to one-way for 14 days.

Monitoring Exclusion

d. To monitor use of the sett the a combination of the following methods may be used.

- An appropriately positioned camera trap to monitor badger activity at the sett.
- Small pencil-sized sticks placed in the floor of the tunnel just inside the entrance, pointing upright.
- Threads pinned to the gate and gate frame to confirm if the gate has been opened.
- Sand placed at the sett entrance (inside and outside the gate).

e. The sett will be visited regularly through the exclusion process to check activity and to check on the integrity of the exclusion materials and make good any damage. If it is apparent that badger(s) have breached the exclusion any necessary repairs will be made and exclusion period will be restarted.

Destruction of the Sett

f. Destruction will proceed as per the method outlined for destruction of inactive setts.

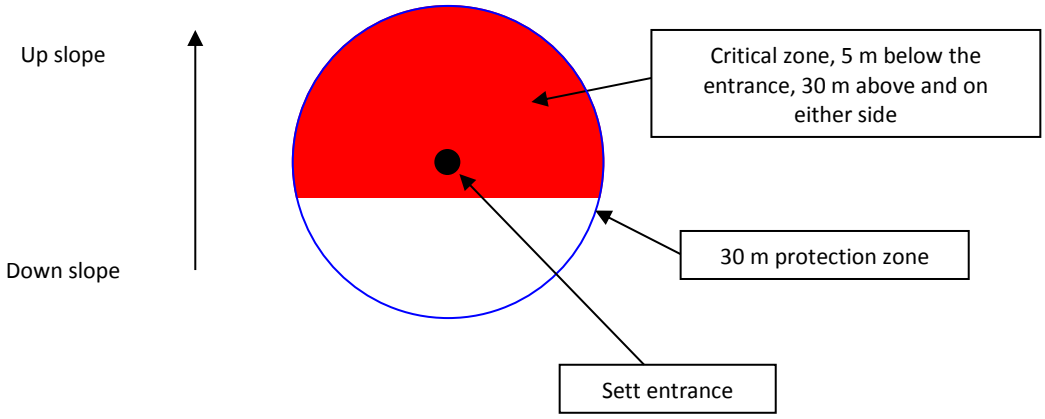
4.3.2 Disturbance to a non-breeding active sett from July – November inclusive

The following methodology will be incorporated into a Site Specific Method Statement and issued prior to work commencing:

Tree Felling and Scrub clearance

All tree and scrub clearance will be undertaken in accordance with the conditions of a Standard Forestry Operations Licence (see https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/badgers-and-licensing/badgers-licences-land).

Track Construction



a. Track construction can be carried out within the 30 m protection zone under the Project Licence providing it does not impact on the "Critical Zone", as shown in the diagram above, and lie within 5 m of the sett entrance. An Agent / ECoW on the Project badger licence will carry out a risk assessment and mark out the maximum protection zone to ensure the integrity of the sett is protected. If works are proposed in the critical zone between 20 and 30m from an entrance, careful hand-digging of a cross trench at the edge of proposed access track route or tower compound will be performed to confirm the tunnels do not extend under the works.

b. The Agent / ECoW will be present immediately before construction starts to re-check for any ecological constraints including newly dug badger setts. Details of any ecological constraints, and associated mitigation, not related to badger will be communicated separately to this plan to all site workers.

Tower Compound Establishment

c. A tower compound can intrude within the 30 m protection zone under the Project licence, where there is no alternative, providing it does not impact on the "Critical Zone" and the sett entrance is a minimum of 5 m out with the compound boundary. The An Agent / ECoW on the Project badger licence will carry out a risk assessment and mark out the maximum protection zone to ensure the integrity of the sett is protected.

d. Badger proof fencing / gates will be used for the compound to reduce the risk of badgers entering the works area. One-way badger gates will be installed at the nearest corner of the compounds to allow animals to escape.

e. The Agent / ECoW will be present immediately before construction starts to re-check for any ecological constraints including newly dug badger setts. Details of any ecological constraints, and associated mitigation, not related to badger will be communicated separately to this plan to all site workers.

5 Revision History

No	Overview of Amendment and Text affected	Previous Document	Revision	Authorisation
01	Transfer to new template and Nomenclature	TG-PS-LT-707 (Rev 1.00)	1.00	Richard Baldwin
02	Hyperlink to "Current use" guidance 'What is a badger sett?' has been added under newly created paragraph 3.8.3. 4.3.1 'Exclusion / Destruction of Inactive Setts at any time of year' (Rev 1.00) has been moved under 3.8.3 to represent Licensing Team changes in accordance with legislation.	TG-NET-ENV-501 (Rev 1.00)	1.01	Richard Baldwin

Appendix A Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER *(insert licence details)*

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for ***<insert details of works>*** to be completed under ***<insert licence details>***. These works are required in order to facilitate the delivery of the *<insert Project details>* (the Project).

Condition ***<insert No.>*** of the above Licence states that a ***<insert species>*** Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect ***<insert species>***. Therefore, no works which would *<insert licensed activity>* ***<insert species>*** shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- ***<insert licence details>***, SNH
- Species Protection Plan (SPP): ***<insert SPP No. and title>*** Rev. X *<insert date>*

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>

Table 1: Summary of Data

Reference	Easting	Northing	Date recorded	Description	Date works exclusion zone demarcated & distance

Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>

Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: *<insert description>*

Reference number: *<insert species record reference>*

Client: SHE Transmission

Task: *<insert description of works>*

Prepared by: *<insert individual or Company name>*

Licensed Agent: *<insert name>*

Method statement for *<insert works description>*

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor's name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of *Contractor's* Representative:..... Date ..../ /

Print name in full: .....

Scottish & Southern Electricity Networks

TG-NET-ENV-502

Safety, Health and Environment

Bat Species Protection Plan

	Name	Title
Author	Francis Williams	Environmental Project Manager
Checked by	Alistair Watson	Environmental Advisor
Approved by	Richard Baldwin	Head of Environment

Contents

Scottish & Southern Electricity Networks

1 Introduction

All bat species occurring in Britain are European Protected Species (EPS), protected under Annex II and IV of EC Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) and are afforded a high level of protection in Scotland. This Protection Plan provides guidance and agreed procedures for the protection of bats and their shelters during construction works on SHE Transmission projects. The Plan contains two parts and details the procedures that must be followed where there is potential for bats to be present (Part 1), and where a Project Licence for bats has been issued by SNH to cover the project (Part 2):

1.1 Part 1: General Protection Plan

This Part applies to all projects where bats may be present and is issued to Contractors. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of bats. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation

1.2 Part 2: Project Licence Protection Plan

This is provided to *Contractors* in addition to Part 1 for large projects where a Project Licence has been issued by SNH to cover the work and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require a Method Statement to be submitted to SNH for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in **Error! Reference source not found.**, below should be used in conjunction with this document

Table 2.1- Miscellaneous Documents

Title
EC Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive)
Conservation (Natural Habitats &c.) Regulations 1994
Conservation (Natural Habitats &c.) Amendment (Scottish) Regulations 2007
https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing

3 Part 1: General Protection Plan

3.2 Background

Bats are a diverse group of mostly nocturnal flying mammals of which there are generally recognised to be 9 different species in Scotland.. There are four more common or widespread species; common pipistrelle (*Pipistrellus pipistrellus*), soprano pipestrelle (*P. pygmaeus*), Daubenton's bat (*Myotis daubentonii*), and brown long-eared bat (*Plectotus auritus*). The two pipistrelle species mentioned above are the ones most likely to be encountered.

The other less common species are Natterer's bat (*M. nattereri*), Nathusis pipistrelle (*Pipistellus nathusii*), Leisler's bat (*Nyctalus leisleri*), whiskered bat (*M. mystacinus*), and Noctule bat (*N. noctula*).

Identification can be made by using bat detectors and recording devices to differentiate the characteristic echolocation signals (used to navigate and catch prey) as well as flight patterns, morphology and DNA analysis of droppings.

Bats exploit a wide variety of natural and semi-natural habitats such as woodlands, pasture, water and hedges in pursuit of insect prey such moths and midges. They use a variety of strategies to catch their prey. For example brown long-eared bats glean insects from foliage, whereas Daubenton's bats gaffe insects from near the surface of water.

Bats rest up during the day in roosts within sheltered voids or cavities. Although all bat species in Scotland rely heavily on man-made structures, roosts can be found in; buildings and ruins, trees (woodpecker holes, cracks, flaky bark and callused flush cuts), bridges, caves and tunnels. Signs of an active roost may include urine staining, presence of flies, scratch marks, strong odour and droppings, however not all roosts have such features. Tree roosts can be particularly difficult to identify.

Roosts are communal structures which are in use at different times and many different types of roosts exist varying from temporary day roosts to more permanent maternity and hibernation roosts. The most sensitive periods for maternity roosts are from early May to late August and hibernation roosts are in use from October until March. Bats are particularly vulnerable to disturbance during hibernation which could result in mortality due to cold temperatures and lack of food resource.

3.3 Responsibilities

It is the *Contractor's* responsibility to comply with all the requirements of this Protection Plan where bats may be present, and it is both the *Contractor's* and SHE Transmission's responsibility to monitor compliance with the Protection Plan. The responsibility for applying for any Licence, including a Project Licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.4 Legislation

All bat species *(Chiroptera)* in Britain are European Protected Species (EPS), protected under Annex II and IV of EC Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive). The Habitats Directive is transposed in Scottish law by the Conservation (Natural Habitats

&c.) Regulations 1994, as amended by The Conservation (Natural Habitats &c.) Amendment (Scottish) Regulations 2007 and others. Bats are listed on Schedule 2 of the Habitats Regulations 1994.

The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007 enhanced this protection. As EPS, it is an offence to deliberately or recklessly[1] kill, injure or take (capture) bats, deliberately or recklessly disturb or harass bats, and damage, destroy or obstruct access to a breeding site or resting place of any bat. It is important to note that bat roosts are protected even at times of year when not in use.

3.5 Surveying for Bats

1. Surveys for bats must be undertaken in all works areas containing suitable bat habitat, at a suitable time of year a maximum of 12 months[2] prior to the works commencing, (this includes site investigations), to ensure the availability of up-to-date information on shelter locations.
2. Surveys must extend for a minimum of 30 m beyond working areas.
3. Pre-construction surveys will be undertaken for all potential roosting features likely to be affected (i.e. built structures and trees). If evidence of roosting bats is encountered further survey may be required to confirm species, roost type and usage.

3.6 Review of Bat Survey

Once a bat survey has been carried out, the ecologist / ECoW should review the survey results, apply the mitigation hierarchy outlined below and decide if a Licence is required (either Individual or Project) for the works.

Construction teams should be advised of existing / new constraints, together with mitigation and licensing requirements by the ecologist / ECoW.

Relevant site documentation and project information sources should be updated with new and amended information on bats constraints as it is produced, with changes communicated to appropriate staff immediately.

1 Reckless acts would include not having or disregarding a mitigation plan aimed at protecting Bats resulting in killing, injury, and/or disturbance of any Bat or Bat Roost, or carrying out an activity which would result in an offence where the presence of Bats was foreknown.

[2] Note: Information from any previous surveys (e.g. surveys carried out to provide data for EIA or other Assessments) can be a useful guide to bats activity in an area, particularly if roosts were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing.

3.7 Mitigation Hierarchy

There is a general presumption against works being carried out which could disturb bats or to destroy / exclude or obstruct access to any bat roost. A hierarchical approach to mitigation of Avoidance - Disturbance - Destruction will be applied to any roost that may be affected:

Avoidance

This is the preferred option for roosts identified within 30 m of works, an initial protection zone of either 30 m will be marked on the ground and appropriately signed to restrict work access.

Protection zones must be maintained until works are completed. Site staff should be briefed of their purpose through a Toolbox Talk and works micro-sited out with the protection zone. If bat disturbance can be avoided in this way, there is no need to obtain a Licence from SNH for the works.

Disturbance

Works required within 30 m of an active roost may constitute disturbance and therefore may require a Licence from SNH (either Individual or Project) this needs assessing on a case by case basis. In these circumstances the ecologist / EcoW must be tasked to assess the likelihood of disturbance to bats, and therefore the need for a licence (in consultation with SNH licensing team if required).Individual Licence applications to SNH should be accompanied by a Protection Plan which outlines how disturbance will be minimised and roosts protected, for example through timing works for when bats are least likely to be present, screening of works and modifying protection zones.

If a Project Licence is in place, part 2 of this document should be used to ascertain whether a formal Method Statement is required to be submitted for approval to SNH prior to works commencing which could disturb bats.

Roost Destruction

Destruction of roosts should only be undertaken as a last resort. For destruction of roosts a Licence will be required from SNH (either Individual or Project). Destruction of maternity roosts and hibernation roosts will only be licensed outside of the seasons when they are in use.

Individual Licence applications to SNH should be accompanied by a Protection Plan which outlines how disturbance of bats will be minimised, roosts compensated for, and individual bats protected. Roost destruction may not always be permitted; this will depend on roost type and rarity of species (see species matrix in part 2 of this document)

If a Project Licence is in place the following activities require a formal Method Statement to be submitted and approved by SNH in accordance with Part 2 of this document, prior to any works commencing:

- Destruction of a breeding / hibernation roost of a Brown long-eared or Daubenton's bat.
- Destruction of any roost of an uncommon species (Natterer's, Leisler's, Whiskered, Noctule, Narthusius's pipistrelle) at any time of year.

For all other scenarios (such a destruction of a non-breeding roost of a more common species outside of the active season) works should be carried out in accordance with part 2 of this document. Any roost subject to works under Licence will be monitored during and after those works.

3.8 Mitigation Measures

3.8.1 General Mitigation

1. An emergency procedure will be implemented by site workers if signs of bat (*e.g*. urine staining, droppings or animals) are encountered. All work within 30 m will cease and the Ecologist / ECoW will inspect the site and define mitigation (if required) in line with this SPP.
2. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH if required).

3.8.2 Monitoring and Reporting

3. The Environmental Representative will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to bats is delivered.
4. Reports will be submitted to SNH as required by the relevant Licence.

3.9 Licensing Requirements

Licence applications must be sent into SNH species licensing team sufficiently in advance of the project start date (approximately 30 days) to ensure the licence is in place prior to any work commencing.

3.10 Project Licence

An SNH Project Licence is likely to be the most appropriate form of Licence for any large scale and / or long running Project, which may result in a large number of minor unavoidable bat offences.

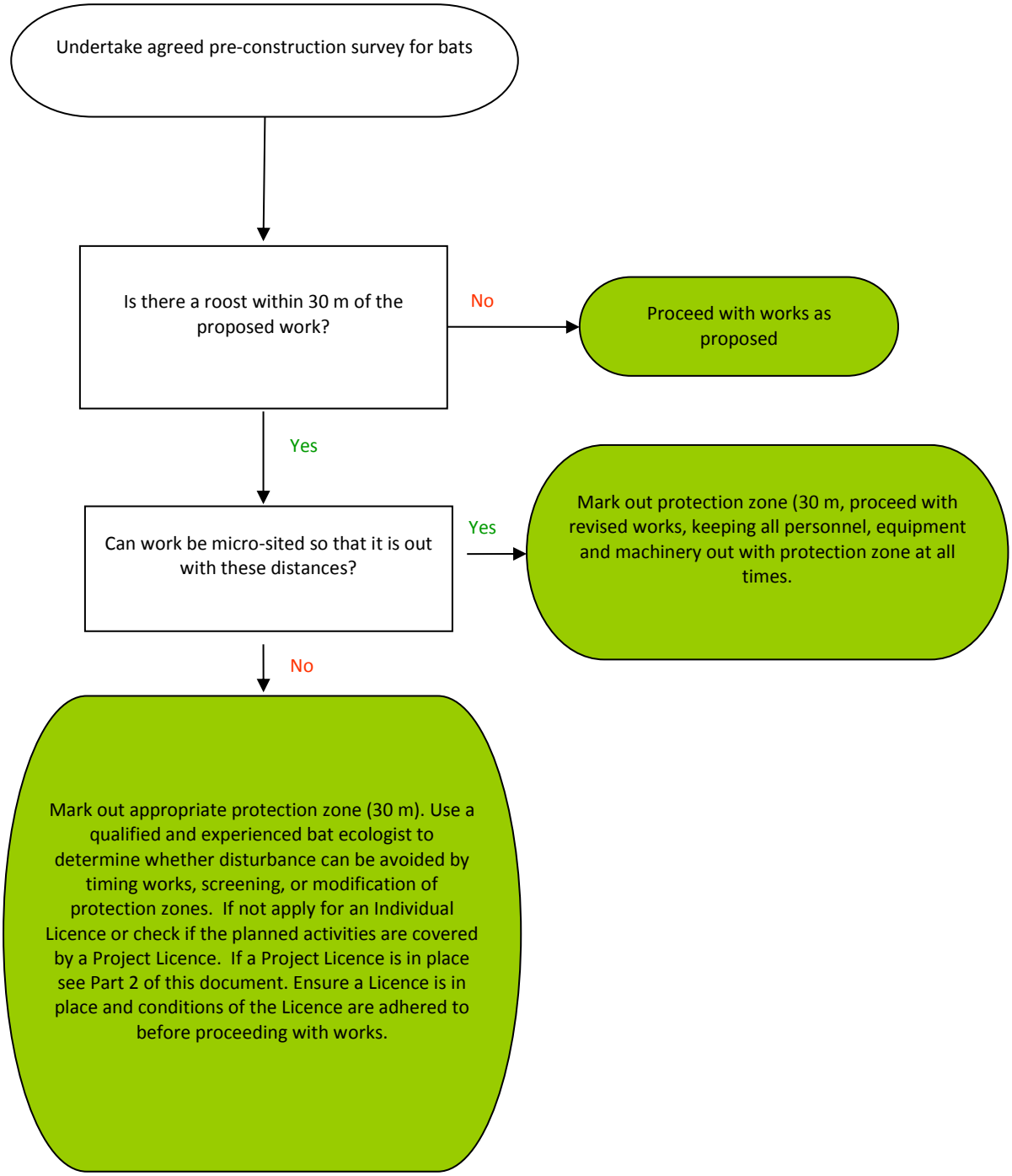
For example, multiple instances of disturbance to a number of bat roosts over several years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency across the project area and throughout the Project's lifespan. Project Licences do not negate the need for thorough pre-development surveys within 12 months of the planned project start date, and pre-construction surveys within 3 weeks of works commencing. Any Project Licence application will need to be accompanied by the Mitigation Plan and procedures for bats included in Parts 1 and 2 of this SPP

3.11 Individual Licence

For small scale Projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable bats offences an Individual SNH Licence is most likely to be appropriate. Licence applications should be accompanied by a Method Statement and should be sent sufficiently in advance of the Project start date to ensure the licence is in place prior to work commencing.

Further guidance and details of how to apply for a bat Licence can be found on the SNH website (https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing).

Bat Mitigation Decision Tree



4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with the Project Licence (insert Licence number) and its conditions.

As stated in the Project Licence, methodologies for certain mitigation activities permitted under the Licence are included in this Part of the SPP. More disruptive activities, listed in Section 1 below, will also require a specific Method Statement to be submitted to SNH licensing team for written approval (see Appendix A). It is the *Contractor*'s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

4.1 Works Allowed under the Project Licence

Under the Project Licence there is a general presumption against works being carried out which could disturb bats, or to destroy / exclude or obstruct access to any bat roost unless it can clearly be demonstrated that either it is inactive (*i.e.* through monitoring) or that there is no alternative solution against Project timescales and requirements.

4.2 Activities requiring an SNH Approved Method Statement

The following activities require a formal Method Statement to be submitted and approved by SNH prior to any works commencing:

a. Disturbance of breeding or hibernation roosts of Common Pipistrelle, Soprano pipistrelle, Brown long-eared, and Daubenton's bat during the seasons when they are likely to be in use;

b. Disturbance of breeding or hibernation roosts of all non-common bat species (i.e. Natterer's, Leisler's, Whiskered, Noctule, Nathusius's, and any other species not normally found in Scotland) at any time.

c. Disturbance of non-breeding and non-hibernation roosts for all non-common bat species (i.e. Natterer's, Leisler's, Whiskered, Noctule, Nathusius's, and any other species not normally found in Scotland);

d. Destruction of a Brown Long-eared or Daubenton's breeding or hibernation roost

e. Destruction of any roosts for all non-common bat species (i.e. Natterer's, Leisler's, Whiskered, Noctule, Nathusius's, and any other species not normally found in Scotland)); and

f. Any exceptional circumstances not covered in this SPP or Points a to c above.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the *Contractor / Named Agent* for all submissions.

Proposed mitigation works should be agreed with SNH.

Species Matrix

This matrix summarises which activities at which time of year can be carried out under this SPP or require an approved method statement. For explanation see text of this SPP.

	Breeding / Hibernation Roosts		Non-breeding / non-hibernation Roosts	
Species	**Disturbance**	**Destruction**	**Disturbance**	**Destruction**
Common Pipistrelle	SPP (outwith seasons)	SPP (outwith seasons)	SPP	SPP
Soprano Pipistrelle	SPP (outwith seasons)	SPP (outwith seasons)	SPP	SPP
Brown Long Eared	SPP (outwith seasons)	Approved MS	SPP	SPP
Daubenton's	SPP (outwith seasons)	Approved MS	SPP	SPP
Natterer's	Approved MS	Approved MS	Approved MS	Approved MS
Nathusius's Pipistrelle	Approved MS	Unlikely to be allowed	Approved MS	Approved MS
Leisler's	Approved MS	Approved MS	Approved MS	Approved MS
Whiskered	Approved MS	Unlikely to be allowed	Approved MS	Approved MS
Noctule	Approved MS	Approved MS	Approved MS	Approved MS
Other species not normally found in Scotland	Approved MS	Approved MS	Approved MS	Approved MS

4.3 Activities not requiring additional SNH approval

The following works may be carried out under this SPP and / or specific Method Statements without the prior approval of SNH, using the prescribed methodologies:

a. Disturbance to non-breeding (note according to European guidance mating roosts are considered to be breeding roosts) and non-hibernation roosts, and disturbance to maternity / hibernation roosts (outwith the seasons they are in use), for the more common species (i.e. common and soprano pipistrelle, Brown long-eared, and Daubenton's bats) Destruction of any common or soprano pipistrelle roosts (including breeding and hibernation) at an appropriate time of year for the type of roost (i.e. When bats are not likely to be present and avoiding sensitive seasons).

b. Destruction of non-breeding and non-hibernation roosts for brown long-eared and Daubenton's bats, at an appropriate time of year for the type of roost when bats are not present, or avoiding sensitive seasons.

4.3.1 1. Disturbance to non-breeding and non-hibernation roosts at any time of year, and disturbance to maternity and hibernation roosts outwith the seasons they are in use,

a) This methodology applies to the following:
- Disturbance to non-breeding and non-hibernation roosts of Common pipistrelle, Soprano pipistrelle, Brown long-eared and Daubenton's bats.

b) If works are to be completed within the protection zone when bats are present the following measures will be adopted in order to minimise potential disturbance to the roost:

- Works will be completed in a manner to reduce and ensure minimal disturbance;
- No use of directional lighting; and
- No site compounds and/or vehicle parking areas will be permitted within 30 m of the roost.

c) Prior to the commencement of Project works, a protection zone will be established to retain the maximum possible distance between Project works and the roost in order to prevent damage. In most cases this protection zone will be no less than 1 m from the drip line of the tree or 5 m for buildings or cave entrances, and will be set up by the Ecologist / ECoW who is an Agent on the Project bat Licence, or a suitably qualified bat worker under their supervision. No construction works will be completed within this zone.

d) All site construction staff will be made aware of the presence of the roost and the requirement to remain outwith the protection zone at all times through a Toolbox Talk and the site EMP.

e) A watching brief would be undertaken by the ECoW as required to ensure that the protection zone has not been breached and that the roost/roost feature has not been inadvertently damaged.

f) No specific ecological mitigation is considered to be required for the disturbance to non-breeding and non-hibernation sites.

4.3.2 2 & 3. Destruction of roosts at an appropriate time of year

a) This methodology applies to the following:

- Destruction of roosts of Common and Soprano pipistrelle bats; and
- Destruction of non-breeding and non-hibernation roosts of Common pipistrelle, Soprano pipistrelle, Brown long-eared and Daubenton's bats.

b) Destruction of these roosts will only be completed at an appropriate time of year (dependent on roost status, avoiding sensitive seasons and if presence/absence of bats can be confirmed).

c) Prior to the commencement of Project works within 30 m of non-breeding and non-hibernation roosts, a protection zone will be set up by the ECoW. No works will be completed within this area until the roost has been destroyed in a controlled manner.

d) All site construction staff will be made aware of the presence of the roost and the requirement to remain out with the protection zone at all times through a Toolbox Talk and the site EMP.

e) Prior to licensed destruction of the roost, appropriate mitigation / compensation shall be provided on a like-for-like replacement basis (*e.g*. provision of roost features that would match the roost to be destroyed). Replacement roost features would be sited as close as possible to the roost to be destroyed but out with any potential disturbance distances. Compensatory roost provision would be agreed with SNH.

f) The destruction of the roost will be completed in a controlled manner under the supervision of the ECoW (who is an Agent on the Project Licence, or a suitably qualified bat worker under their supervision), in order to ensure that no bats are injured and/or killed. The following measures will be adopted during the controlled destruction of the roost:

- Prior to any works being completed that will result in the destruction of non-breeding and non-hibernation roosts, a survey will be completed to determine whether bats are present or absent, the status of the roost and the species involved (through visual or lab analysis of droppings).
- Where a roost is to be destroyed during the active period, and the presence of bats is confirmed or cannot be discounted, bats will be excluded from the roost using an appropriate exclusion device. (*e.g.* a cotton sleeve) which will be fitted to the observed entrance/exit point by the ECoW.
- A dawn survey will be undertaken on the day of the exclusion to confirm the absence of bats returning to the roost. These surveys will be undertaken when the dawn

temperature is > 8° C. Should bats be seen entering the roost the exclusion will be postponed for 3 days and the process repeated.

- The exclusion device will remain in place for 7 days, unless this corresponds to a period of cold or adverse weather (where the temperature at dusk is < 8° C or heavy rain), then the excluder must stay in place for a further 7 days.
- In the event of bats being identified within the roost during destruction, the ECoW is responsible for determining the best course of action with respect to the welfare of the animals.

5 Revision History

No	Overview of Amendment and Text affected	Previous Document	Revision	Authorisation
01	Transfer to new template and Nomenclature	TG-PS-LT-708 (Rev 1.00)	1.00	Richard Baldwin
02	Sentence 3.8.2 (1) has been replaced by the equivalent sentence of precursor TG-PS-LT-708. Paragraph 3.10 has been replaced by the equivalent paragraph of precursor TG-PS-LT-708. Paragraph 3.11 has been replaced by the equivalent paragraph of precursor TG-PS-LT-708 (with exception of update to SNH hyperlink)	TG-NET-ENV-502 (Rev 1.01)	1.01	Richard Baldwin

Appendix A Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER *(insert licence details)*

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for ***<insert details of works>*** to be completed under ***<insert licence details>***. These works are required in order to facilitate the delivery of the *<insert Project details>* (the Project).

Condition ***<insert No.>*** of the above Licence states that a ***<insert species>*** Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect ***<insert species>***. Therefore, no works which would *<insert licensed activity>* ***<insert species>*** shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- ***<insert licence details>***, SNH
- Species Protection Plan (SPP): ***<insert SPP No. and title>*** Rev. X *<insert date>*

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>

Table 1: Summary of Data

Reference	Easting	Northing	Date recorded	Description	Date works exclusion zone demarcated & distance

Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>

Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: *<insert description>*

Reference number: *<insert species record reference>*

Client: SHE Transmission

Task: *<insert description of works>*

Prepared by: *<insert individual or Company name>*

Licensed Agent: *<insert name>*

Method statement for *<insert works description>*

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor's name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of *Contractor's* Representative:..... Date ..../ /

Print name in full: .....

Scottish & Southern Electricity Networks

TG-NET-ENV-504

Safety, Health and Environment

Red Squirrel Species Protection Plan

	Name	Title
Author	Francis Williams	Environmental Project Manager
Checked by	Alistair Watson	Environmental Advisor
Approved by	Richard Baldwin	Head of Environment

Contents

1 Introduction

Red squirrel (*Scirius vulgaris*) is afforded a high level of protection in Scotland. This Protection Plan provides guidance and agreed procedures, for the protection of red squirrels and their shelters, during construction works on Scottish Hydro Electric Transmission (SHE Transmission) projects. The Plan contains two parts and details the procedures that must be followed where there is potential for red squirrel to be present (Part 1), and where a Project Licence for red squirrel has been issued by Scottish Natural Heritage (SNH) Licensing Team to cover the project (Part 2).

1.1 Part 1: General Protection Plan

This Part applies to all projects where red squirrel may be present. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of red squirrel. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing.

1.2 Part 2: Project Licence Protection Plan

This Part is provided to Contractors in addition to Part 1, for large projects where a Project Licence has been issued by SNH to cover the work, and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require an additional Method Statement to be submitted to SNH Licensing Team for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence, to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in Table 2.1 – Miscellaneous Documents below, should be used in conjunction with thius document

Table 2.1- Miscellaneous Documents

Title
Wildlife and Countryside Act 1981 (as amended)
The Nature Conservation (Scotland) Act 2004
Wildlife and Natural Environment (WANE) [Scotland] Act 2011
https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide

3 Part 1: General Protection Plan

3.1 Background

Red squirrels are rodents with a widespread distribution in Scotland, although as they are predominately woodland animals they are largely absent from the Scottish islands (with the exception of Arran) and the far North West. They are currently under pressure, particularly in southern areas, due to a number of factors including competition from the non-native grey squirrel (*Scirius carolinensis*), disease (squirrel pox virus – SQPV), and habitat loss and fragmentation. Grey squirrels are not protected by law, and it is an offence to release them into the wild if caught.

Red squirrels are largely solitary, not strictly territorial, and generally arboreal, spending up to 70% of the time in the tree canopy. Densities generally vary from 1 per hectare, to 1 per 10 hectares of suitable habitat. They obtain most of their food from seeds or fruits from trees, although they are opportunistic. They build dense spherical nest structures called dreys, which are generally about 30cm in diameter and consist of an outer layer of twigs often with leaves still attached with an inner layer of softer materials such as moss and/or leaves. Dreys tend to be in the forks or against the trunks of trees such as spruce (*Picea abies*), Scots pine (*Pinus sylvestris*) or oak (*Quercus* spp.). Squirrels can also use holes in trees, nest boxes and other cavities as dreys. Several dreys may be in used at the same time, and it can take less than a day for a new drey to be built.

Red squirrels have two peak breeding seasons, the first litters being born between February and April with a second litter from May to August. The exact timing is however dependent on food availability and weather. In winter red squirrels do not hibernate, but are less active particularly in bad weather (high winds, heavy rain and cold). In summer, they have two periods of peak activity; one in the early morning and one in the evening, whereas in winter this shifts to one main activity peak earlier in the day.

Signs of red squirrel:

- Feeding signs – stripped cones or cleanly split nuts often in piles on tree stumps.
- Squirrel prints and tracks – characteristic squirrel tracks show the hind feet (with five toes) in front of the forefeet (four toes), in hops of less than 1 meter. Hind feet are 35mm wide and 40mm long.
- Squirrel shelters - dreys

It is not possible to distinguish between field signs of red and grey squirrels in the field therefore visual surveys, cameras and/or hair tubes (with appropriate biosecurity measures in place), may be required in areas where the two species are present. Red squirrels can vary in colour and there can be confusion with grey squirrels; adult grey squirrels are much larger and lack ear tufts.

3.2 Responsibilities

It is the *Contractor's* responsibility to comply with all the requirements of this Species Protection Plan where red squirrel may be present, and it is both the *Contractor's* and SHE Transmission's responsibility to monitor compliance with this Species Protection Plan. The responsibility for applying for any licence, including a

project wide licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.3 Legislation

Red squirrel is afforded full protection under Schedule 5 of the Wildlife and Countryside Act 1981, (as amended), most recently by the Wildlife and Natural Environment (WANE) [Scotland] Act 2011. This makes it an offence to kill, injure or take a red squirrel or to intentionally or recklessly[1] damage, destroy or obstruct access to any place used for shelter or for breeding. Disturbance to this species in its drey also constitutes an offence.

SNH can grant licences to enable certain activities that would otherwise be an offence, to be carried out in relation to red squirrels and their dreys, subject to the following:

a) That undertaking the conduct authorised by the licence will give rise to, or contribute towards the achievement of, a significant social, economic or environmental benefit; and

b) That there is no other satisfactory solution.

In granting a licence SNH has to take into account the consequences for red squirrels at a local population level, to assist this assessment SNH will need to see maps of the area of operations and also surrounding areas of suitable red squirrel habitat.

3.4 Surveying for Red Squirrel

1. Surveys for red squirrel must be undertaken in all works areas containing suitable red squirrel habitat, a maximum of 12 months[2] prior to works commencing, (this includes site investigations). As squirrels can rapidly build new dreys, pre-felling surveys a maximum of 3 weeks prior to works commencing, must also be undertaken to ensure the availability of up-to-date information on squirrel drey locations.
2. Surveys must extend for a minimum of 50 m beyond working areas, including access tracks.
3. All drey trees must be marked to permit easy identification.
4. All dreys found must be assumed to be red squirrel, unless definitive evidence exists that they are grey squirrel only.
5. Surveys must be carried out by suitably qualified and experienced Ecologists and must identify whether any squirrel dreys are likely to be affected by the works.

If works during the breeding season (February to September inclusive) cannot be avoided, and dreys may be disturbed by works, it may also be important to establish if dreys are being used for breeding. The non-

[1] Reckless acts would include disregard of mitigation aimed at protecting red squirrels, resulting in killing, injuring and/or disturbance of any red squirrel or red squirrel resting place.
[2] Note: Information from any previous surveys (e.g. surveys carried out to provide data for EIA or other Assessments) can be a useful guide to red squirrel activity in an area, particularly if dreys were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing. Pre-felling surveys a maximum of 3 weeks prior to works are recommended.

invasive method must be used in the first instance: Visual observation and camera surveillance from the ground, for a period of three days used to establish if the drey is in regular use. If regular use is established the drey must be assumed to be being used for breeding purposes. Where this type of drey monitoring is not practical for example in situations of poor visibility it is recognised that more invasive methods may be required, if this situation arises SNH licensing team must be contacted for advice on whether a survey licence will be required: licensing@snh.gov.uk.

3.5 Review of Red Squirrel Survey

Once a red squirrel survey has been carried out, the Ecologist / Ecological Clerk of Works (ECoW) must review the survey results, apply the mitigation hierarchy outlined below and decide if a licence is required from SNH (either Individual or Project) for the works.

If required, licences (individual or project), must be obtained by SNH prior to any works commencing.

Construction teams should be advised of existing / new constraints, together with mitigation / compensation, and licensing requirements by the Ecologist / ECoW.

Relevant site documentation and project information sources should be updated with new and amended information on red squirrel constraints as it is produced, with changes communicated to appropriate staff immediately.

3.6 Mitigation Hierarchy

There should be a general presumption against works being carried out which will disturb red squirrels in their drey, or which will require the destruction of any red squirrel drey. A hierarchical approach to minimise the works impact on red squirrel should be established as follows:

Avoidance

This is the preferred option. Appropriately sized protection zones must be marked and signed on the ground by the Ecologist / ECoW, with appropriate material, around all squirrel dreys identified during the pre-works surveys. The breeding season (February to September inclusive) is the most sensitive time for disturbance, during this time a 50m radius protection zone must be established around all squirrel dreys. Out with the breeding season, a protection zone of one tree from the drey tree (or 5 metres radius - whichever is lesser) must be established. For high noise / vibration activities (pile driving or blasting) a 100m radius protection zone around drey trees must be established at any time of year.

All works personnel, machinery, vehicles and storage of materials must be restricted from entering protection zones. Protection zones must be maintained until all works are completed. Site staff must be briefed of their purpose through a Toolbox Talk by the Ecologist / ECoW. If red squirrel disturbance can be avoided in this way, there is no need to obtain a licence from SNH for the works.

Disturbance

If works within protection zones boundaries cannot be avoided, a Licence for disturbance from SNH will be required. For small scale projects the licence may be specific to the site, for larger scale works a Project Licence may be appropriate.

Individual licence applications for disturbance must be accompanied by a Mitigation Plan which outlines how the disturbance will be minimised, and dreys protected from damage, for example through screening of works and modifying protection zones.

If a Project Licence is in place, and a drey being used in the breeding season will be disturbed, a Method Statement must be submitted to SNH for written approval in accordance with Part 2 of this document, prior to any works commencing. The Method Statement must state how works will be carried out in a way which ensures no abandonment of young.

Destruction

Destruction of dreys must only be undertaken as a last resort and requires a Licence from SNH. Individual Licence applications to SNH must be accompanied by a Mitigation / Compensation Plan which outlines how disturbance will be minimised and individual squirrels protected from injury, and may include provision for the creation of an artificial drey if appropriate. If destruction of a drey during the breeding season is required, the plan should include details of non-invasive monitoring which will take place to ensure breeding is not taking place prior to any drey destruction.

Any drey subject to works under Licence must be monitored during and after those works.

3.7 Mitigation Measures

3.7.1 General Mitigation

1. An emergency procedure will be implemented by site workers if squirrel dreys are encountered. All work within 5 m (non-breeding season) or 50 m (breeding season) will cease, and the ECoW will inspect the site and define mitigation (if required) in line with this SPP.
2. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH Licensing Team if required).

3.7.2 Monitoring and Reporting

3. The Ecologist / ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to red squirrel is delivered.
4. Reports will be submitted to SNH as required by the relevant Licence.

3.8 Licensing Requirements

Licence applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 40 days) to ensure the licence is in place prior to any work commencing.

3.9 Project Licence

An SNH Project Licence is likely to be the most appropriate form of licence for any large scale and / or long running project, in red squirrel areas. For example, where multiple instances of disturbance to a number of red squirrel dreys is anticipated over several months / years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency across the project area and throughout the Project's lifespan. Project Licences do not negate the need for thorough pre-construction survey within 12 months and three weeks of the planned project start date.

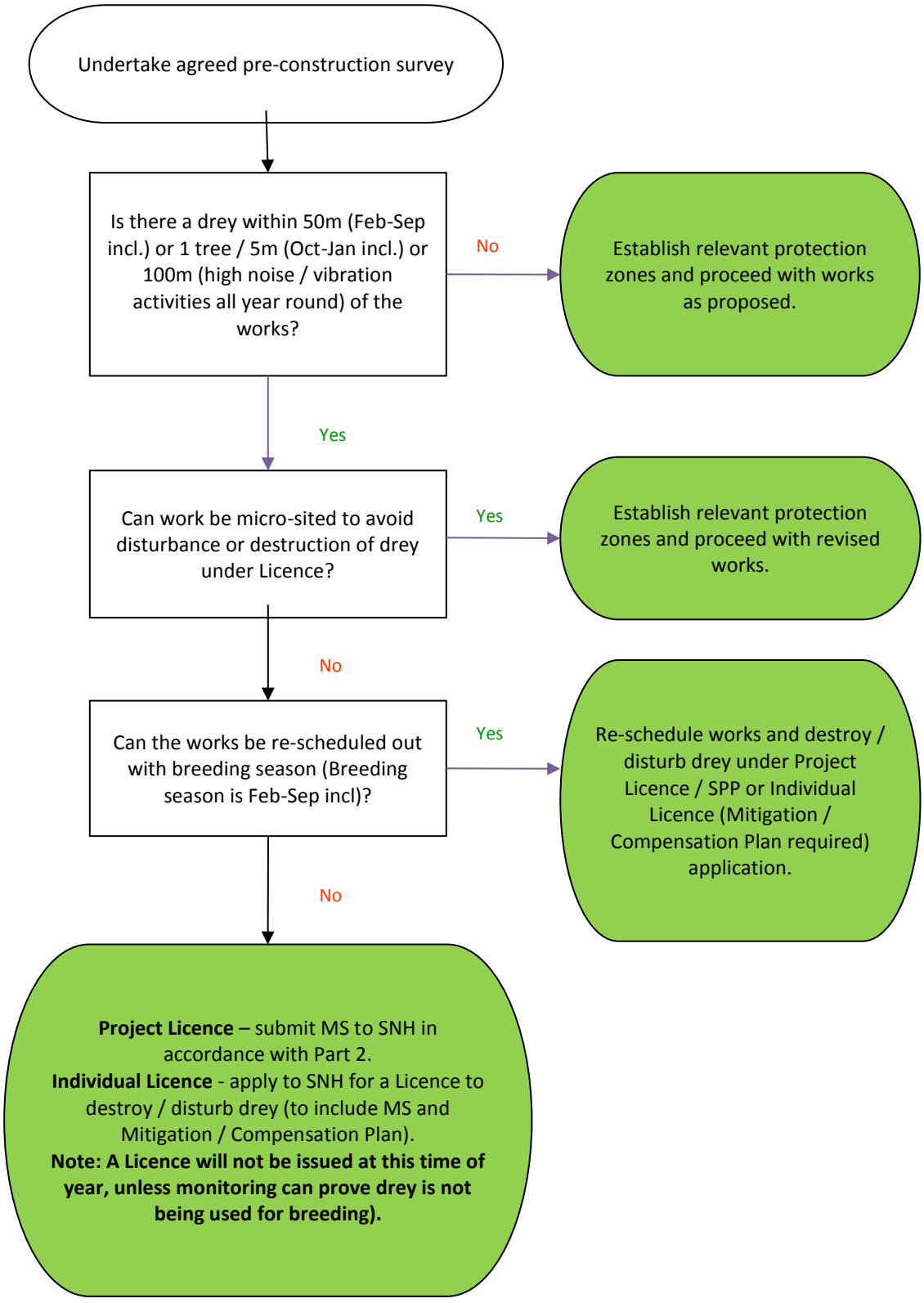
Any Project Licence application will need to be accompanied by a red squirrel survey carried out within 12 months of the proposed works start date, and procedures for red squirrel included in Parts 1 and 2 of this SPP.

3.10 Individual Licence

For small scale projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable red squirrel offences an Individual SNH Licence is most likely to be appropriate. All licence applications must be accompanied by a red squirrel survey carried out within 12 months of the proposed works start date, and a mitigation / compensation plan.

Further guidance and details of how to apply for a red squirrel Licence can be found on the SNH website https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/red-squirrels-and-licensing.

Red Squirrel Mitigation Decision Tree



4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with the Project Licence (insert Licence number) and its conditions.

Mitigation activities permitted under Project Licence are included in this Part of the SPP (section A). More disruptive activities, listed in Section B below, will require a specific Method Statement to be submitted to SNH Licensing Team for approval, prior to works commencing (see Appendix A). It is the *Contractor*'s responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

In advance of, and during construction at any location where there is the potential for red squirrel to be present, it is **essential** that this plan is followed.

4.1 Works Allowed under this SSP

The following works may be carried out under this SPP without further approval from SNH, using the prescribed methodologies:

1. **Disturbance to red squirrel dreys out with the breeding season (October to January inclusive)**

   Red squirrel dreys must not be damaged or destroyed, but protected from potential damage by setting up a modified protection zone (size determined by the site Ecologist / ECoW). Protection zones must be clearly marked on the ground and signed, and must exclude all works personnel, machinery, vehicle and storage. The protection zone must be maintained until all works are finished.

   A licence return must be sent to SNH licensing team detailing all disturbance works under the Project Licence.

2. **Destruction of red squirrel dreys out with the breeding season (October to January inclusive)**

   Destruction of squirrel dreys must only be undertaken as a last resort. Prior to a drey being destroyed, the Ecologist / ECoW must satisfy themselves that no squirrel is present within the structure. Dreys must be destroyed in a controlled manner to ensure no injury or killing of animals. All works must be overseen by an experienced Ecologist / ECoW.

   A licence return must be sent to SNH Licensing team detailing all drey destruction works carried out under the Survey Licence.

4.2 Activities requiring an SNH Approved Method Statement

The following activities require a formal Method Statement to be submitted and approved in writing by SNH licensing team prior to any works commencing:

a. Disturbance or destruction of a drey during the breeding season.
b. Any exceptional circumstances not covered in this SPP.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the *Contractor / Named Agent* for all submissions. The methodology used should be based on the following:

A. Destruction or disturbance to a drey within the breeding season (February to September inclusive)

a. There must be a presumption against disturbance or destruction of a squirrel drey during the breeding season, if unavoidable this work requires that a detailed Method Statement is agreed in writing with SNH Licensing Team prior to works commencing.

b. Non-invasive survey methods must be used to establish if the drey is in regular use. An experienced and qualified Ecologist / ECoW must use visual observation and video surveillance from the ground for a period of three days of daytime observations, to establish if the squirrel drey is in regular use. If the drey is in regular use it must be assumed that it is being used for breeding purposes.

c. If the survey establishes that there is no regular use by squirrel, destruction of the shelter can be carried out as for during the non-breeding season.

d. Dreys being used for breeding must not be destroyed or disturbed and no works carried out within 50 m of the structure, until the site Ecologist / ECoW has confirmed that dependent young are no longer present. The young begin leaving the drey at *c.* 7 weeks and are weaned at 8-10 weeks old.

e. Once completion of breeding has been confirmed through monitoring, and the site Ecologist / ECoW has satisfied themselves that no squirrel are present within the structure, the drey can be destroyed in a controlled manner to ensure no injury or killing of animals.

f. A licence return must be sent to SNH Licensing team detailing all drey destruction works carried out under the Project Licence.

4.3 SNH Survey Licence

The Ecologist / ECoW must obtain a survey licence from SNH licensing team prior to using the following invasive survey methods:

a. Where squirrel dreys are not clearly visible from the ground, and the Ecologist / ECoW needs to establish whether they are being used for breeding (i.e. non-invasive methods as described above cannot be used), camera traps mounted on adjacent trees may be employed (under survey licence from SNH) as an alternative in suitable weather conditions. Camera survey must be carried out for at least three consecutive days. The ECoW / Ecologist must be confident that this method is appropriate for detecting use at the given location.

b. Where the above survey methods are inappropriate, inspection of squirrel dreys may be undertaken by tree climbing or cherry picker and endoscopic inspection (under survey Licence from SNH) to confirm the presence/absence of young squirrels.

5 Revision History

No	Overview of Amendment and Text affected	Previous Document	Revision	Authorisation
01	Transfer to new template and Nomenclature	TG-PS-LT-710 (Rev 1.00)	1.00	Richard Baldwin
02	Author change, typos corrected and web links updated	TG-NET-ENV-504 (Rev 1.00)	1.01	Richard Baldwin

Appendix A Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER *(insert licence details)*

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for ***<insert details of works>*** to be completed under ***<insert licence details>***. These works are required in order to facilitate the delivery of the *<insert Project details>* (the Project).

Condition ***<insert No.>*** of the above Licence states that a ***<insert species>*** Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect ***<insert species>***. Therefore, no works which would *<insert licensed activity>* ***<insert species>*** shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- ***<insert licence details>***, SNH
- Species Protection Plan (SPP): ***<insert SPP No. and title>*** Rev. X *<insert date>*

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>

Table 1: Summary of Data

Reference	Easting	Northing	Date recorded	Description	Date works exclusion zone demarcated & distance

Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>

Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: *<insert description>*

Reference number: *<insert species record reference>*

Client: SHE Transmission

Task: *<insert description of works>*

Prepared by: *<insert individual or Company name>*

Licensed Agent: *<insert name>*

Method statement for *<insert works description>*

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor's name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of *Contractor's* Representative:..... Date .... / /

Print name in full: .....

Scottish & Southern Electricity Networks

TG-NET-ENV-505

Safety, Health and Environment

Bird Species Protection Plan

	Name	Title
Author	Francis Williams	Environmental Project Manager
Checked by	Alistair Watson	Environmental Advisor
Approved by	Richard Baldwin	Head of Environment

Contents

Scottish & Southern Electricity Networks

1 Introduction

Construction works have the potential to negatively impact on breeding birds as a result of either direct destruction of nests or disturbance which may result in breeding failure. In addition, some particularly sensitive species are liable to disturbance outwith the breeding season.

This Species Protection Plan (SPP) outlines the procedures that must be followed where there is a potential for breeding birds to be affected. It explains the responsibilities of Scottish Hydro Electric Transmission (SHE Transmission) and its Contractors, the legislative protection for birds, and the measures required to minimise impacts on birds and thereby the risk of criminal offences being committed.

2 References

The documents detailed in Table 2.1 – Miscellaneous Documents below, should be used in conjunction with thius document

Table 2.1- Miscellaneous Documents

Title
Wildlife and Countryside Act 1981 (as amended)
The Nature Conservation (Scotland) Act 2004.
https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/birds-and-licensing

3 Responsibilities

It is the Contractor's responsibility to comply with all the requirements of this plan and it is both the Contractor's and SHE Transmission's responsibility to monitor compliance with the plan.

4 Legislation

All wild birds

All wild birds are protected by law under the Wildlife and Countryside Act (WCA) 1981 (as amended). Recent and significant changes have been made to the protection of wild birds in Scotland by The Nature Conservation (Scotland) Act 2004.

It is an offence to intentionally or recklessly[1]:

- kill or injure any wild bird;
- capture or keep [alive or dead] any wild bird;
- destroy or take the egg of any wild bird;
- sell or advertise for sale any wild bird or its eggs;
- destroy, damage, interfere with, take or obstruct the use of the nest of any wild bird while it is in use or being built.

Schedule 1 birds

Additional protection is given to rare breeding birds listed under Schedule 1 of the WCA. It is an offence to intentionally or recklessly;

- Disturb any Schedule 1 species while they are nest building, or at a nest containing eggs or young;
- Disturb the dependent young of such birds.

Also with specific reference to capercaillie the Act makes it an offence to:

- Intentionally or recklessly disturb capercaillie at lekking sites.

Schedule 1A and A1 birds

Further protection is given to birds listed on Schedule 1A and A1 of the Act, making it an offence **at any time of year** to:

- Harass a white-tailed eagle, golden eagle, hen harrier and red kite (1A); and
- Damage a nest of a white-tailed eagle or golden eagle (A1).

At present, it is not possible to obtain a derogation to disturb Schedule 1 breeding birds or destroy nests of any wild breeding birds for the purposes of development. However, the control of certain species is licensable in a restricted number of circumstances such as for reasons of public health and safety. A licensing system is also in place for surveying protected species if a disturbance offence is possible.

Further advice is available on the Scottish National Heritage (SNH) website: https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/birds-and-licensing.

1 Reckless acts would include disregard of mitigation aimed at protecting birds, resulting in killing, injury, and/or disturbance of birds or their nests.

5 Protection Plan

In advance of construction at any location where breeding birds may be present, it is **essential** that this plan is followed.

5.1 Pre-construction/dismantling surveys and data collation

1. Pre-construction / dismantling surveys for breeding birds will be completed a maximum of 12 months prior to start of any works in a particular area, and at an appropriate time of year, to ensure availability of up-to-date information to inform any mitigation measures required.
2. Surveys will be carried out by suitably experienced ecologists / ornithologists using methods agreed with SNH under Survey Licences where required.
3. Pre-construction / dismantling surveys will:
    - include up to 1000 m either side of Limits of Deviation (LOD's) / boundaries for substation construction areas and access tracks; and
    - be undertaken in accordance with SNH's Guidance on Assessing the Impact of Overhead Power Line Proposals on Birds for overhead lines.
4. Relevant local recorders/field workers, e.g. raptor workers, will be contacted at the pre-construction phase for recent records of sensitive species that might be affected.

5.2 Review of works and impact assessment

1. The Ecological Clerk of Works (ECoW) will review whether construction activities are likely to affect breeding birds and, if so, what mitigation options are available. A hierarchical approach to mitigation will be applied to any occupied bird habitat that may be affected under the Project works, as detailed in the "General mitigation" section below. Priority will be given to assessing and mitigating impacts to species listed on Schedule 1.
2. Construction teams will be advised of existing / new constraints together with mitigation options by the ECoW.
3. Project Geo-databases and / or relevant site documentation, e.g. Environmental Management Plans (EMP's), will be updated with new and amended information as it is produced, with changes communicated to appropriate staff as required.

5.3 General Mitigation

1. This SPP is designed to provide the Contractor and Ecological Clerk of Works (ECoW) with an approved methodology for protecting breeding birds.

2. The ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to breeding birds is delivered.
3. A hierarchical approach to mitigation of Programme / Avoid / Risk Assess will be applied to any birds that may be affected under the Project works.
    - Where practicable, works will be programmed outwith breeding season see https://www.nature.scot/bird-breeding-season-dates-scotland for information on breeding seasons for areas likely to contain numerous breeding sites (e.g. forestry areas).
    - For key specially protected or sensitive species, appropriate protection zones (see table in Appendix A) will be established upon confirmation of nest building / breeding taking place. Protection zones will also be set out by a suitably qualified ECoW for all breeding birds and those species whose roost sites are also protected i.e. red kite and hen harrier. No works will be carried out within these zones whilst birds are:
        1. building or using their nest,
        2. still dependent on the nest site, or
        3. present at roost sites. The ECoW will advise when it is safe for works to be carried out.
    - During the breeding season (or whilst birds are roosting at other times of year) where programme critical works must be carried out within the protection zones, the ECoW will carry out a Protected Species Risk Assessment (Appendix B) to assess whether disturbance can be avoided during the works. Considerations will include the species involved, local topography, natural screening, type of works and existing levels of human activity, e.g. farming, forestry and habitation.
4. The protection zone may then be reduced if it can be demonstrated, and agreed by a Specialist Adviser and / or SNH as required, that works will not cause disturbance.
5. Monitoring will be undertaken by the ECoW or Specialist Adviser, where appropriate, to ensure no disturbance is caused.
6. An emergency procedure will be implemented by site workers if breeding birds are encountered. All work within 50 m (non-scheduled species) or the relevant maximum protection distance for species listed in Appendix A will immediately cease, and the ECoW will inspect the site and define any mitigation in line with this SPP.
7. In exceptional cases, standard mitigation measures (as outlined above) may be insufficient. In such scenarios, mitigation will be determined on a case- specific basis. No construction works would be undertaken within the protection zone until mitigation has been agreed (in consultation with SNH if required).

5.4 Specific Mitigation

1. Dissuasion Techniques

Dissuasion techniques may be used to make areas less attractive to nesting birds or birds returning back to a previous nesting location (dissuasion will not be carried out where there is potential to harass Schedule 1A

species, or interfere with / damage a Schedule A1 nest). Dissuasion may include felling of trees / clearance of scrub prior to the breeding season commencing or placement of bird scarers / frightening devices.

Should any bird nesting attempts be found within the footprint of construction, an appropriate protection zone will be marked around the nest. A suitably qualified ecologist will then ensure that works do not affect any nest, bird, eggs or young at this location, through micro-siting or re-programming of works as per the general mitigation outlined in this SPP.

Habitat management

a) Scrub clearance / felling / strimming may be used to discourage birds nesting prior to the start of the breeding season in suitable areas. This method has a dual purpose in also in dissuading reptiles / small mammals. For strimming a sward is cut to a height of 2-5cm depending upon vegetation type and ground conditions and this can be achieved by hand strimmers or mechanical means depending upon the ground conditions. The advantage of this method is that the vegetation can be cleared in advance of the works and in slow growing areas, i.e. heath, there is a potential for the site to remain free of constraints for a longer period of time. The ECoW will advise on the potential for other ground nesting species to occupy these areas; in such instances, scaring may be appropriate in conjunction with the management of sward height.

b) Clearance of habitat will be undertaken outwith the breeding season; scarers will be placed no later than 10 days before construction commences. Weekly walkover checks by a suitably licenced and experienced ecologist shall then be undertaken to ensure that the mitigation measures are being effective.

Active dissuasion / disturbance

a) At sites where there will be a high level of human activity, noise and possible vibration from construction activities this should dissuade some nesting activities; and

b) Areas identified to be at risk of nesting birds will be identified and disturbance levels at these locations will be increased. Sites will be visited regularly to dissuade birds from nesting (this may include tower climbing on overhead line projects).

c) Several types of bird scarer/ frightening device can be used, and are detailed below. The use of each should be determined by the ECoW.

d) Hawkeyes are probably the most effective of the bird scarers that have been used on the previous projects. A small number of these have been effective in deterring birds from nesting within construction areas. These will be deployed prior to the start of the breeding season and moved around the compound to stop the birds becoming accustomed to them.

e) Ticker tape can be used in more sheltered areas and can work well however they can be difficult to attach to poles/canes and work best on fencing such as that for the compounds.

f) Scarecrows can be constructed using old PPE and are a cheap way to supplement the Hawkeyes.

g) Once deployed, scarers will be kept on site for a period sufficient to minimize the risk of birds settling on site during the works.

h) As construction commences, suitable nesting sites within the construction footprint will normally be reduced. The frequency of ongoing checks will then be decided by the ECoW on a site by site basis.

2. Removing Disused Bird Nests

The objective of this mitigation is to provide specific guidelines for the protection of birds and their nesting places before and during construction works, but also to facilitate the removal of old or disused nests where required for construction or maintenance works, such as:

a) in substations where birds have nested on equipment causing a fire risk;

b) in order to allow dismantling of redundant towers; or

c) where the presence of a nest interferes with construction, maintenance or upgrading of overhead transmission lines.

Not specially protected birds

a) It is an offence to remove any birds nest while it is being built or in use and it is an offence to take, destroy or possess the egg of a wild bird.

b) If a bird nest is to be removed, then it must be shown to be disused.

c) Before a nest of any species is removed, where there is any doubt as to whether the nest is in use or not, it will be monitored by the ECoW over a period of a week. Direct observations of nests will be made on the 1st, 3rd and 5th days as well as monitoring from suitable vantage points and where necessary with camera traps. The nest will be removed only when there is clear evidence that the nest is disused and no eggs are present.

d) Should eggs be found, the nest will not be moved until a licence has been obtained from SNH for the taking of the eggs.

Schedule 1 species

a) For white-tailed eagle and golden eagle (Schedule A1) it is an offence to remove or damage a nest at any time, regardless of whether it is currently in use.

b) The disused nests of any other Schedule 1 or Schedule A1 species needing to be removed will be subject to an assessment and agreed with SNH. The assessment will detail the needs case for removal, bird species involved, monitoring, information about the nest and clarification of whether it is in habitual use, habitat and any further nests within the area associated with that bird. Nest monitoring will be undertaken by a suitably licensed and experienced ecologist and / or Specialist Adviser.

6 Revision History

No	Overview of Amendment and Text affected	Previous Document	Revision	Authorisation
01	Transfer to new template and Nomenclature	TG-PS-LT-718 (Rev 1.00)	1.00	Richard Baldwin
02	Weblinks updated	TG-NET-ENV-505 (Rev 1.00)	1.01	Richard Baldwin

Appendix A Summary Guidance on Species Specific Disturbance Distances

Note: the protection zone distances given here are indicative - specific distances will vary depending on individual sites and will require expert advice informed by information provided in Ruddock & Whitfield (2007).

Table 2

Species	Min-Max Protection Zone (m) (3,10,14)	Indicative Protection Zone dates	Notes
Black grouse	300 - 500	March – May (2)	Males lek mainly around dawn and dusk and therefore the presence of a lek would not necessarily represent a constraint. In terms of disturbance, avoid the two hours after sunrise and two hours before sunset.
Barn owl	50 - 100	Mid Feb - June (1) (see notes)	The period of mid Feb-June has been given to emphasise the fact that Barn Owls can begin nesting earlier than many other species and if eggs were laid in mid to late March the young would have left the nest by the end of June. Where barn owls are nesting in sites with a relatively high current level of human disturbance it may be possible to reduce the offset distance further.
Black-throated diver	500 - 750	April – Sept (see notes) (1)	This nesting season is slightly longer than that given in Currie and Elliott (1997) and includes the pre-egg-laying period when the birds arrive at the breeding lochs in April. Note that adults often remain at the lochs until September (some young may not fledge until September) and can arrive in March (2,4).
Capercaillie	500 – 750	March - August (1)	Capercaillie lekking takes place sporadically from January onwards increasing into late winter and peaking in spring. Males lek mainly around dawn and dusk and therefore the presence of a lek would not necessarily represent a constraint. In terms of disturbance, between the times of two hours after sunrise and two hours before sunset are best avoided. Eggs are laid usually from mid-April to early May and young fledge by mid-June to late July (1,4).
Crested tit	50 - 100	April - mid July (3)	The nesting period for this species is variable, being affected by factors such as spring temperatures, altitude and incidence of second broods (although these are rare in Scotland). The period given allows for this variability but generally chicks will have fledged by early June (1, 2, 4, 6).
Common crossbill	100 - 150	Feb - May (3)	It should be noted that this represents a typical peak nesting period but that the species can effectively nest all year round depending on the abundance of cone crops.
Scottish crossbill	100 - 150	Feb - May (1), (3)	The breeding season can occasionally be later than this with eggs recorded into June which could mean young not leaving the nest until early August, assuming a late June laying date and an incubation and fledging period of 13 days and 21 days respectively (1). Typically, however young would have fledged before the end of June (1 & 4).
Golden Eagle	750 - 1000	All year round	Golden eagles are present in their breeding territories all year round. Nest building takes place from autumn to late winter with mating occurring between January and April (mainly March). For non-breeding roosts the buffer should be maintained as a minimum 2 hours before and 2 hours after sunset and sunrise respectively to avoid disturbance.
Goldeneye	100 - 300	April - July (2)	The young of goldeneye leave the nest soon after hatching (in May) and are taken to the water by the female. They can often be taken a considerable distance from the nest site to the rearing area by the female (1, 2, 4).

Species	Min-Max Protection Zone (m) (3,10,14)	Indicative Protection Zone dates	Notes
Goshawk	300 - 500	April-July (1), (3) (see notes)	This does not include the pre-egg-laying period with birds occupying their territories from March. Most young fledge in July and are independent at about 70 days (approximately one month after fledging) (1, 4).
Greenshank	300 - 400	April-July	Eggs are laid from late April to late May with the average around mid-May in Scotland. Incubation period is around 24 days and chicks fledge at between 25 and 31 days old (7).
Golden Plover	200 - 400	April - July (1)	In Northern Scotland, the first eggs are laid from mid-April but up to 2-3 weeks later. .
Hen Harrier	500 - 750	All year round (1), (8) (see notes)	The species is not fully migratory in Scotland and birds can be seen on breeding grounds in almost any month, although generally the return is in March. The first egg is usually laid between late April and mid-May but sometimes earlier. Early failures can see the replacement clutch not complete until mid-June. Non-breeding roosts are important in pair formation and the 750 m buffer should be maintained as a minimum 1 hour before and 1 hour after sunset and sunrise respectively to avoid disturbance. Sudden noisy works should also be avoided at these times.
Honey Buzzard	500 - 600	Mid May-Sept (1), (4)	Birds usually arrive on breeding grounds in mid- to late-May. Eggs are laid in June to July with incubation lasting up to 37 days and the fledging period 40-44 days, meaning young usually fledge in September. Young return to the nest for food until they are about 55 days old and become independent from 75-100 days (1, 4).
Kingfisher	50 - 100	April - July (1) (see notes)	The breeding season of kingfisher is prolonged by multiple broods (normally 1-2 in Britain). Incubation is 19-21 days and the fledging period 23-27 days with young independent within a few days (1).
Merlin	300 - 500	April - July (1)	Adults return to breeding sites in April (but sometimes earlier) with peak egg laying late May to early June in Scotland. Incubation is 28-32 days and fledging period 25-27 days, becoming independent two to four weeks later. This means young birds will often still be dependent on their parents for food in August (1, 10).
Osprey	500 - 750	March - August (2)	Birds arrive at the nest site in late March/early April with eggs typically laid from mid-April to mid-May, although they can be laid in early April. Incubation takes five to six weeks (35-43 days) and fledging 50-55 days, young being dependent for a further 10-20 days at least. Early nesters would therefore fledge in July with later birds fledging in August with young possibly still being dependent in early September (1,11,12).
Peregrine	500 - 750	March - June (1) (2)	Return to breeding areas in March to early May. Eggs are laid from mid-March to May. Incubation is 29-32 days per egg (clutch size 3-4 with an interval of 2-3 days between laying but hatching nearly synchronous) and fledging period is 35-42 days with young being dependent for at least two months. Late nesters could therefore fledge in July and still be dependent on their parents for food into September whereas early nesters could have fledged young in May (1,10).
Red Kite	150 - 300	March - August (1) (2) (9) See notes	Most British birds return to their breeding sites in March and lay during the first three weeks of April (Scottish birds on average towards the end of this period) but there is considerable variation with laying possible between late March and early May. Incubation is 31-32 days and fledging period is around eight weeks. Newly fledged young are dependent on their parents for several weeks and remain close to the nest. Late attempts could see young fledged in early August and not become dependent until early September (9). For non-breeding roosts the 300 m buffer should be maintained as a minimum 2 hours before and 2 hours after sunset and sunrise respectively to avoid disturbance.

Species	Min-Max Protection Zone (m) (3,10,14)	Indicative Protection Zone dates	Notes
Red-backed Shrike	150	May - mid July (1)	Post fledging dependence is long in this species with young being dependent on parents for about 40 days (1).
Red-throated Diver	500 - 750	Apr - Aug (1) (2)	Birds usually return to their breeding lochs in April with peak egg laying from late May to early June (occasionally later). Incubation lasts around 27 days and fledging occurs after 34-48 days meaning most young fledge in August but occasionally into September. Pre-fledging movement of chicks to other nearby lochs occasionally occurs (1,2,4).
Redwing	50 - 100	Late April - August (1) (2) (4)	This species has a long nesting season due to the fact that it commonly has two broods in a year. Eggs are laid from early May to mid-July (occasionally earlier). Incubation is for 12-13 days and fledging takes around ten days with young dependent for a further two weeks. Young are usually fledged by early August (1, 4).
Short-eared owl	300 - 500	March - July (1) (2)	Eggs are laid from mid- to late-March to July with incubation taking 24-29 days and fledging 24-27 days with a period of post fledging dependence lasting several weeks. Late broods would therefore not fledge until August and early nesters could have chicks in the nest by mid-April (1,2).
White-tailed Eagle	500 - 750	All year round (14) See notes	The Ruddock & Whitfield report indicates 500-750 m buffer for the breeding season. Draft forestry guidance advocates 250 m for most activities near roosts outwith the breeding season, it should be noted that roosts of immatures can be all year. For non-breeding roosts the buffer should be maintained as a minimum 2 hours before and 2 hours after sunset and sunrise respectively to avoid disturbance.

References:

(1) Birds of the Western Palaearctic
Vols I-V, VII, VIII (1977-1994)
(2) Gilbert et al. (1998)
(3) Currie & Elliott (1997)
(4) Batten et al. (1990)
(5) Shawyer (1998)
(6) Perrins (1979)
(7) Nethersole-Thompson & Nethersole-Thompson (1979)
(8) Watson (1977)
(9) Carter (2001)
(10) Petty (1998)
(11) Dennis et al. (2004)
(12) Poole (1989)
(13) Watson (1997)
(14) Ruddock & Whitfield (2007)

Appendix B Protected Species Risk Assessment Template

<Project name>: Protected Species Risk Assessment

<Title including record ID and location>

Scope of Work

This method statement is applicable for <insert details of works to be undertaken>. The work comprises of:

Location and Access/Egress

<Insert details including map / plan>

Description of species, distance from planned works and ground conditions

Reference Number	BNGR letters	OS Grid reference	Place	Description	Distance from project works	Predicted project impact

<Insert details>

Programme of Works

The following works are planned within the buffer distance:

<Insert details including timing and duration>

Planned Equipment and Manpower

The operation will be carried out by the following personnel and using the following equipment:

<Insert details>

Risk Assessment/ Supervision of Work

<Insert details of baseline conditions including topography, proximity to works, existing disturbance levels, mitigation measures and operational controls, likely levels of disturbance from works and summary of risk rating (Low / Medium / High)>

Scottish & Southern Electricity Networks

Scottish & Southern Electricity Networks

TG-NET-ENV-508

Safety, Health and Environment

Pine marten Species Protection Plan

	Name	Title
Author	Francis Williams	Environmental Project Manager
Checked by	Alistair Watson	Environmental Advisor
Approved by	Richard Baldwin	Head of Environment

Contents

1 Introduction

Pine marten (*Martes martes*) is listed in Schedule 5 of the Wildlife and Countryside Act 1981, as amended, most recently by the Wildlife and Natural Environment (WANE) [Scotland] Act 2011 and is afforded a high level of protection in Scotland. This Species Protection Plan provides guidance and agreed procedures, for the protection of pine marten and their shelters, during construction works on Scottish Hydro Electric (SHE) Transmission projects. The Plan contains two parts and details the procedures that must be followed where there is potential for pine marten to be present (Part 1), and where a Project Licence for pine marten has been issued by Scottish Natural Heritage (SNH) Licensing Team to cover the project (Part 2).

1.1 Part 1: General Protection Plan

This Part applies to all projects where pine marten may be present. Part 1 outlines the responsibilities of SHE Transmission and the Contractor regarding protection of pinemarten. It also details relevant legislation, survey requirements, general mitigation measures and the requirement for licensing and mitigation.

1.2 Part 2: Project Licence Protection Plan

This Part is provided to *Contractors* in addition to Part 1, for large projects where a Project Licence has been issued by SNH to cover the work, and identifies those activities and protection / mitigation measures which are permitted under the Project Licence and those activities which require an additional Method Statement to be submitted to SNH Licensing Team for written approval before works can commence. This Part should be followed in conjunction with Part 1 and the relevant Project Licence, to provide approved guidance and methodologies for carrying out work.

2 References

The documents detailed in Table 2.1 below, should be used in conjunction with this document.

Table 2.1- Miscellaneous Documents

Title
Wildlife and Countryside Act 1981
Wildlife and Natural Environment (WANE) [Scotland] Act 2011
https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/pine-martens-and-licensing

3 Part 1: General Protection Plan

3.1 Background

Pine martens are a member of the mustelid family with a population distributed throughout northern Scotland extending down to the northern boundary of the central belt and including a number of the islands including Mull and Skye. There is also a population in Dumfries and Galloway. Following the dramatic reduction in numbers of pine martens in the 19th century they are currently undergoing resurgence due in part to the legal protection they are afforded under the Wildlife and Countryside Act 1981.

Pine martens are solitary territorial animals. Although the edges of territories may overlap slightly, separate individuals are rarely found in close proximity to each other. They generally inhabit woodland or scrubby areas as they require a large amount of cover, and spend much of their time in the canopy. Pine martens are omnivorous, consuming a diet consisting of a wide variety of animals (predominantly small mammals) as well as berries and nuts allowing them to be active all year round. Both male and female pine martens have large territories of up to 8 km2 for females and 20 km2 for males. Due to the size of their territories pine martens have a number of dens (resting places) throughout their territory. They also make breeding nests, which can either be within rocks, in hollowed out trees or in bird nests / squirrel dreys. Increasing pine martens use human habitation such as attics, sheds and other farm buildings for both places of shelter and breeding dens.

Pine marten have two stages to their breeding behaviour with mating taking place in July – August but with the implantation of the fertilised egg delayed until February - March. The young are then born 1 month later and remain with the mother for approximately 12 weeks. Pine martens are mainly active at night and dawn/dusk times, although can also be seen during the day.

Signs of Pine marten:

- Pine marten prints and tracks – five toed slightly cat like footprints only of significant use in areas with snow cover. Tracks on the edge of territories are often marked with scat which can vary considerably in size and shape depending on contents.

- Pine marten shelters or dens can be either on the ground in rocky crevices or in elevated tree cavities, abandoned bird nests or owl boxes.

- Pine marten scat – is 4 – 12 cm long and 0.8 – 1.8 cm in diameter with often a narrow and twisted appearance. The scats may have a musky smell likened to Parma Violets, although this can vary and DNA analysis can be required to confirm identification.

Due to their nocturnal activity it can be difficult to confirm the presence of pine martens at suspected dens, therefore camera traps may be required to positively identify a pine marten and confirm its presence in the area.

3.2 .Responsibilities

It is the *Contractor's* responsibility to comply with all the requirements of this Species Protection Plan where Pine marten may be present, and it is both the *Contractor's* and SHE Transmission's responsibility to monitor

compliance with this Species Protection Plan. The responsibility for applying for any licence, may vary from project to project, but all applications and mitigation works will adhere to this plan.

3.3 Legislation

Pine marten is afforded full protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), most recently by the Wildlife and Natural Environment (WANE) [Scotland] Act 2011. This makes it an offence to kill, injure or take a pine marten or to intentionally or recklessly[1] damage, destroy or obstruct access to any place used for shelter or for breeding. Disturbance to this species in any place used for shelter or breeding also constitutes an offence.

SNH can grant licences to enable certain activities that would otherwise be an offence, to be carried out in relation to pine martens and their places of shelter, subject to the following:

a) That undertaking the conduct authorised by the licence will give rise to, or contribute towards the achievement of, a significant social, economic or environmental benefit; and

b) That there is no other satisfactory solution.

In granting a licence SNH has to take into account the consequences for pine martens at a local population level, to assist this assessment SNH will need to see maps of the area of operations and also surrounding areas of suitable pine marten habitat.

3.4 Surveying for pine marten

1.Surveys for pine marten must be undertaken in all works areas containing suitable pine marten habitat, a maximum of 12 months[2] prior to works commencing, (this includes site investigations), to ensure availability of up to date information on place of shelter locations.

2. Surveys must extend for a minimum of 100 m beyond working areas, including access tracks.

3. All dens must be marked to permit easy identification.

4. Surveys must be carried out by suitably qualified and experienced ecologists and must identify whether any pine martens and/or their places of shelter are likely to be affected by the works.

[1] Reckless acts would include disregard of mitigation aimed at protecting pine martens, resulting in killing, injuring and/or disturbance of any pine marten or pine marten resting place.

[2] Note: Information from any previous surveys (e.g. surveys carried out to provide data for Environmental Impact Assessment (EIA or other Assessments)
can be a useful guide to pine marten activity in an area, particularly if dens were recorded. However, surveys will always require to be updated if carried out more than 12 months prior to works commencing. Pre-felling surveys a maximum of 3 weeks prior to works are recommended.

If works during the breeding season (March to August inclusive) cannot be avoided, and breeding dens may be disturbed by works, it may also be important to establish if these dens are being used for breeding. The non- invasive method as follows must be used in the first instance: Visual observation and camera surveillance from the ground, for a period of a minimum of 14 consecutive days prior to works commencing, used to establish if the breeding den is in regular use. If regular use is established the den must be assumed to be being used for breeding purposes.

3.5 Review of pine marten Survey

Once a pine marten survey has been carried out, the ecologist / Ecological Clerk of Works (EcoW) must review the survey results, apply the mitigation hierarchy outlined below and decide if a licence is required from SNH (either Individual or Project) for the works.

If required, licences (individual or project), must be obtained by SNH prior to any works commencing.

Construction teams should be advised of existing / new constraints, together with mitigation / compensation, and licensing requirements by the ecologist / ECoW.

Relevant site documentation and project information sources should be updated with new and amended information on pine marten constraints as it is produced, with changes communicated to appropriate staff immediately.

3.6 Mitigation Hierarchy

There should be a general presumption against works being carried out which will disturb pine martens in their den, or which will require the destruction of any pine marten den. A hierarchical approach to minimise the works impact on pine marten should be established as follows:

Avoidance

This is the preferred option. Appropriately sized protection zones must be marked and signed on the ground by the ecologist / EcoW, with appropriate material, around all pine marten dens identified during the pre-works surveys. The breeding season (March to June inclusive) is the most sensitive time for disturbance, during this time a 100m radius protection zone must be established around all pine marten dens. Out with the breeding season, a protection zone of 30 metres radius must be established. For high noise / vibration activities (pile driving or blasting) a 100m radius protection zone around pine marten dens must be established at any time of year.

All works personnel, machinery, vehicles and storage of materials must be restricted from entering protection zones. Protection zones must be maintained until all works are completed. Site staff must be briefed of their purpose through a Toolbox Talk by the ecologist / EcoW. If pine marten disturbance can be avoided in this way, there is no need to obtain a licence from SNH for the works.

Disturbance

If works within protection zones boundaries cannot be avoided, a Licence for disturbance from SNH will be required. For small scale projects the licence may be specific to the site, for larger scale works a Project Licence may be appropriate.

Individual licence applications for disturbance must be accompanied by a Mitigation Plan which outlines how the disturbance will be minimised, and dens protected from damage, for example through screening of works and modifying protection zones.
If a Project Licence is in place, and a den being used in the breeding season will be disturbed, a Method Statement must be submitted to SNH for written approval in accordance with Part 2 of this document, prior to any works commencing. The Method Statement must state how works will be carried out in a way which ensures no abandonment of young.

Destruction
Destruction of dens must only be undertaken as a last resort and requires a Licence from SNH. Individual Licence applications to SNH must be accompanied by a Mitigation / Compensation Plan which outlines how disturbance will be minimised and individual pine martens protected from injury, and may include provision for the creation of an artificial den if appropriate. If destruction of a den during the breeding season is required, the plan should include details of non-invasive monitoring which will take place to ensure breeding is not taking place prior to any den destruction.
Any den subject to works under Licence must be monitored during and after those works.

3.7 Mitigation Measures

3.7.1 General Mitigation

1.An emergency procedure will be implemented by site workers if pine marten dens are encountered. All work within 30 m (non-breeding season) or 100 m (breeding season) will cease, and the ECoW will inspect the site and define mitigation (if required) in line with this SPP.

2. Any temporarily exposed pipe system to be capped when contractors are off site to prevent pine marten from gaining access. Similarly, all exposed trenches and holes must be provided with mammal exit ramps when contractors are off site (i.e. at night time).

3. An exceptional circumstance procedure will be implemented should mitigation options not prove satisfactory in a particular case. Works will be halted whilst mitigation is determined (under consultation with SNH Licensing Team if required).

3.7.2 Monitoring and Reporting

5. The Ecologist / ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to Pine martens is delivered.

6. Reports will be submitted to SNH as required by the relevant Licence.

3.8 Licensing Requirements

Licence applications must be sent into SNH licensing team sufficiently in advance of the project start date (approximately 30 days) to ensure the licence is in place prior to any work commencing.

3.9 Project Licence

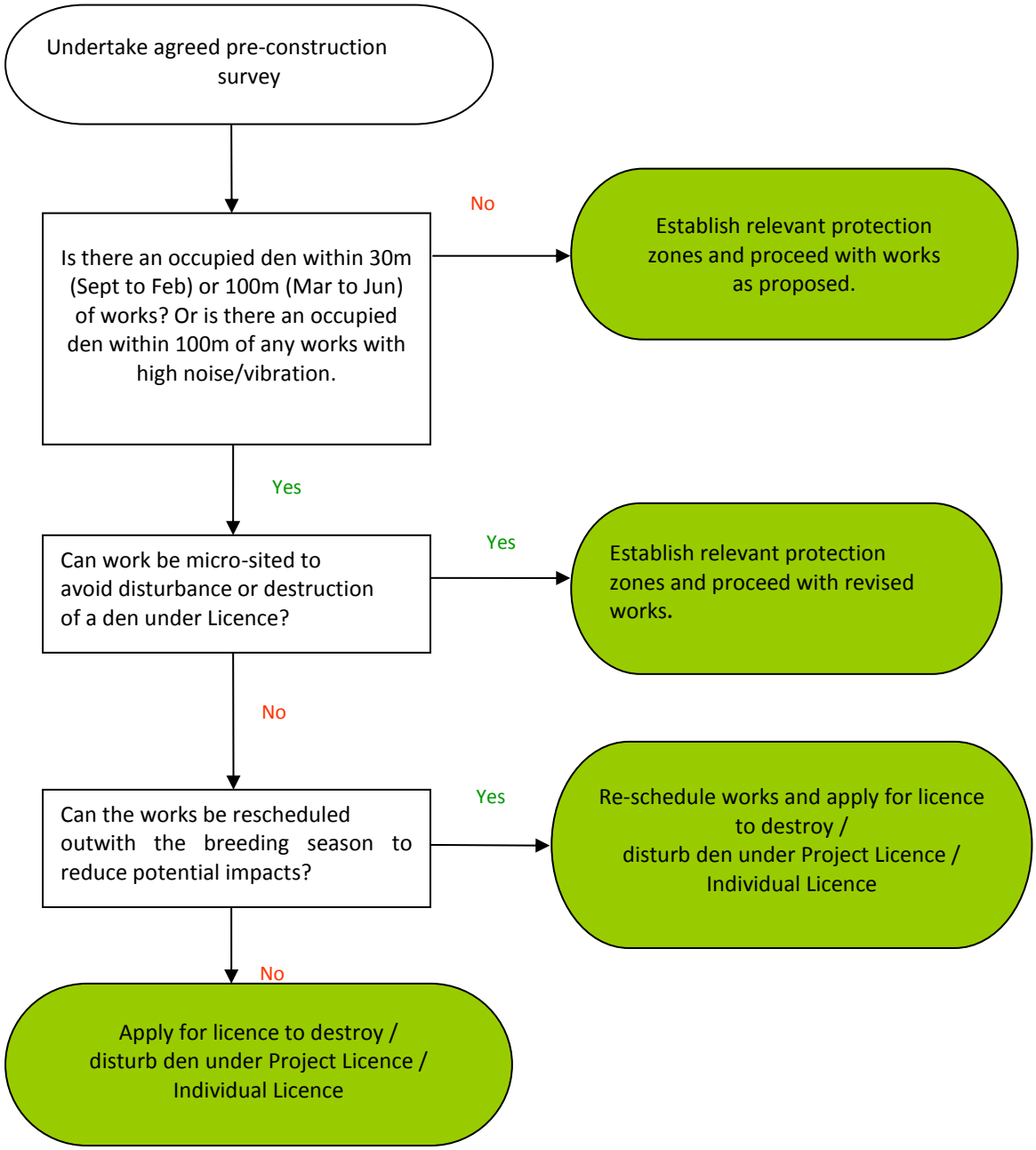
An SNH Project Licence is likely to be the most appropriate form of licence for any large scale and / or long running project, in pine marten areas. For example, where multiple instances of disturbance to a number of pine marten resting places is anticipated over several months / years. A Project Licence can be used to standardise protected species mitigation / compensation, creating consistency across the project area and throughout the Project's lifespan. Project Licences do not negate the need for thorough pre-construction survey within 12 months and three weeks of the planned project start date.

Any Project Licence application will need to be accompanied by a Mitigation / Compensation Plan, and procedures for pine marten included in Parts 1 and 2 of this SPP.

3.10 Individual Licence

For small scale projects expected to be completed over relatively short timescales, which will result in a low number of unavoidable pine marten offences an Individual SNH Licence is most likely to be appropriate. Licence applications should be accompanied by a Mitigation Plan and should be sent sufficiently in advance of the project start date to ensure the licence is in place prior to work commencing. Further guidance and details of how to apply for a pine marten Licence can be found on the SNH website https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/licensing/species-licensing-z-guide/pine-martens-and-licensing.

Pine marten Mitigation Decision Tree



4 Part 2: Project Licence Protection Plan

The following sections of this plan are to be read in conjunction with Part 1 of this document, the Project Licence (insert Licence number) and its conditions.

Mitigation activities permitted under Project Licence are included in this Part of the SPP (section A). More disruptive activities, listed in Section B below, will require a specific Method Statement to be submitted to SNH Licensing Team for approval, prior to works commencing (see Appendix A). It is the *Contractor's* responsibility to submit these Method Statements to both SHE Transmission and SNH for written approval. No works shall proceed without this written approval.

Sufficient time should be allowed for in the programme to carry out any consultation work and obtain necessary approvals.

The Project Licence will specify reporting requirements detailing all disturbance and destruction works carried out.

In advance of, and during construction at any location where there is the potential for pine marten to be present, it is **essential** that this plan is followed:

A. Works allowed under the project licence without further approval from SNH Licensing Team

The following works may be carried out under this SPP without further approval from SNH, using the prescribed methodologies:

1. Disturbance to a den or place of shelter out with the breeding season. This includes ground and aerial dens, whether occupied, or unoccupied and located within known pine marten territory.

Methodology:

Pine marten dens must not be damaged or destroyed, but protected from potential damage by setting up a modified protection zone (size determined by the site ecologist / EcoW). Protection zones must be clearly marked on the ground and signed, and must exclude all works personnel, machinery, vehicle and storage. The protection zone must be maintained until all works are finished. Works will be undertaken in as short a period as possible to minimise the level of disturbance. A project licence return must be sent to SNH licensing team detailing all disturbance works under the Project Licence.

a. Before works commence, the ECoW will:

- Attend the site in order to check whether pine marten is present or not. If pine marten is present, then works may need to be delayed until the ECoW is satisfied suitable access / egress away from the place of shelter is safeguarded. If no pine marten is present, works can proceed.

- Brief the site personnel, including contractors and subcontractors, regarding the presence of the pine marten dens and the protected status of pine marten, their dens and the conditions

of this Species Protection Plan, which allows for felling and construction within 30 m of the den

.

- Describe the actual den and state that no machinery must drive over it or if it is in a tree the den tree must not be cut down.

b. The den should be clearly marked with a blue tipped stick adjacent to the hole. For an aerial den the tree will be marked with a thick band of blue tape around the trunk.

c. For felling operations, the whole area within the 30 m protection zone, excepting the den tree itself, may be felled using a harvester.

d. Works within 30 m of the den will be undertaken within 1 day wherever possible. Where works take longer, the ECoW will carry out a pre-works check each morning for pine marten presence.

B. Activities requiring an SNH Approved Method Statement Prior to Works Commencing

The following activities require a formal Method Statement to be submitted and approved in writing by SNH licensing team prior to any works commencing:

a. Temporary or permanent exclusion or destruction of a den.

b. Any works within 100m of a breeding den during the breeding season.

c. Any exceptional circumstances not covered in this SPP.

The Method Statement template in Appendix A has been developed in conjunction with SNH and should be used by the *Contractor / Named Agent* for all submissions.

5 Revision History

No	Overview of Amendment and Text affected	Previous Document	Revision	Authorisation
01	Transfer to new template and Nomenclature	TG-PS-LT-721 (Rev 1.00)	1.00	Richard Baldwin
02	Typos, formatting and references to other species removed.	TG-NET-ENV-508 (Rev 1.00)	1.01	Richard Baldwin

Appendix A Project Licence Method Statement Template

<PROJECT TITLE>

METHOD STATEMENT FOR WORKS UNDER *(insert licence details)*

<insert species record reference>

<insert date>

Introduction

This document, prepared on behalf of SHE Transmission provides a Method Statement for ***<insert details of works>*** to be completed under ***<insert licence details>***. These works are required in order to facilitate the delivery of the *<insert Project details>* (the Project).

Condition ***<insert No.>*** of the above Licence states that a ***<insert species>*** Protection Method Statement be submitted to Scottish Natural Heritage (SNH) licensing team for written approval, under specific circumstances, prior to commencement of works which could affect ***<insert species>***. Therefore, no works which would *<insert licensed activity>* ***<insert species>*** shall take place without written confirmation of SNH approval of this method statement.

This Method Statement makes reference to the following documents:

- ***<insert licence details>***, SNH
- Species Protection Plan (SPP): ***<insert SPP No. and title>*** Rev. X ***<insert date>***

Further information is provided in Table 1: Summary of Data.

Licensable Works

Introduction

<Insert details>

Baseline Description

<Insert description, including photographs / location plan>

Table 1: Summary of Data

Reference	Easting	Northing	Date recorded	Description	Date works exclusion zone demarcated & distance

Survey Summary

<Insert details>

Description of the Proposed Licensable Works

<Insert details>

Works Duration

<Insert details>

Consideration of Alternatives

<Insert details>

Impact Assessment

<Insert details>

Method Statement Site Briefing (to be delivered to relevant staff prior to works)

Site: *<insert description>*

Reference number: *<insert species record reference>*

Client: SHE Transmission

Task: *<insert description of works>*

Prepared by: *<insert individual or Company name>*

Licensed Agent: *<insert name>*

Method statement for *<insert works description>*

Before works commence:

All relevant personnel will be made aware of the presence and location of the constraint and mitigation.

<insert details of methodology>

During works:

<insert details of methodology>

<Insert Contractor's name>

I, the undersigned, confirm receipt of this method statement and fully understand and agree to work to the conditions therein.

Signature of *Contractor's* Representative:..... Date ..../ /

Print name in full: .....

All method statements must be submitted to, and agreed in writing by, SNH licensing team:
licensing@snh.gov.uk
Telephone 01463725364

Scottish & Southern Electricity Networks

Scottish & Southern Electricity Networks
TRANSMISSION

TG-NET-ENV-527

Safety, Health and Environment

Wood Ant Species Protection Plan

TG-NET-ENV-527	Wood Ant Species Protection Plan		Applies to Transmission ✓
Revision: 1.00	**Classification:** Internal	**Issue Date:** March 2022	**Review Date:** March 2030

	Name	Title
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Approved by	Richard Baldwin	Head of Environment

Contents

1 General Protection Plan Introduction

This Protection Plan provides guidance and agreed procedures for the protection of wood ants during construction works on SSEN Transmission projects. The plan details the procedures that must be followed where wood ants have been observed within the construction area.

2 Background

2.1 There are three key species of wood ant, which are as follows:

Formica aquilonia (Scottish wood ant) This species has a fringe of hairs at the rear of the head which does not extend down to the compound eyes. Viewed from the side, it does not appear hairy. It builds very large mound nests, up to two metres in diameter and up to 1.5 m high. These nests are rarely isolated and are often linked by long trails to neighbouring mounds, effectively forming one huge colony.	 ©Gabor Pozsgai	 ©Jenni Stockan
Formica lugubris (Hairy or Northern wood ant) In *F. lugubris* the fringe of hairs at the rear of the head extends down to the compound eyes. There are also long hairs on the thorax and when viewed from the side, the top of the thorax looks very hairy. They build large mound nests about two metres in diameter and one metre high. Some nests exist in isolation, but large groups of interconnecting nests often occur, and may contain many hundreds of queens.	 ©Hayley Wiswell	 ©Hayley Wiswell
Formica exsecta (Narrow-headed ant)[1] The distinctive feature of this ant is the notch in the top of the head and the narrow appearance of the head. It is smaller in size compared to the other wood ants, with workers around seven millimetres long. Their nests are dome-shaped mounds, smaller in size than the other two species, about 30 cm in diameter. Note: Narrow-headed ant has a very restricted distribution: Abernethy, Glenmore, Carrbridge, Mar Lodge (all in the Cairngorms National Park), and Camghouran alongside Loch Rannoch. It's not known elsewhere in Scotland.	 © Alex Hyde	 ©Jenni Stockan

[1]*Formica exsecta is not strictly speaking a wood ant however they share a common ancestor. Therefore, F. exsecta is being considered as a wood ant for the purposes of this plan.*

2.2 The nests of all three species offer opportunities for shining guest ant (Formicoxenus nitidulus) which is about 2.8 to 3.6 mm long and lives in the colonies of the much larger species. It is difficult to detect; therefore, all wood ant nests should be considered to be potential habitat.

2.3 Further information on wood ants can be found in a 'Guide to the Wood Ants of the UK and related species', published by the Cairngorms National Park Authority in 2021. A digital copy of this guide and further guidance on relocation of wood ant nests can be found at www.woodants.org.uk.

3 Responsibilities

It is the Contractor's responsibility to comply with all the requirements of this Protection Plan where wood ants may be present, and it is both the Contractor's and SHE Transmission's responsibility to monitor compliance with the Protection Plan.

4 Legislation

4.1 Narrow-headed ant and shining guest ant are both included on the Scottish Biodiversity List.

4.2 Section 1(2)(a) of the Nature Conservation (Scotland) Act 2004 requires every public body and office-holder to have regard to the Scottish Biodiversity List as a requirement of their biodiversity duty under section 1(1) of the Act. This requirement includes SSEN Transmission as the holder of a licence under section 6(1) of the Electricity Act 1989.

5 Surveying for Wood Ants

5.1 In advance of construction a walkover will be undertaken by a qualified and experienced ecologist to check construction areas for wood ants. Once the survey has been carried out, the ecologist / Environmental Clerk of Works (ECoW) shall review the survey results and apply the mitigation hierarchy outlined below.

5.2 Ongoing checks will be undertaken throughout construction by the project ecologist. Construction teams should be advised of existing / new constraints, together with mitigation requirements by the ecologist / ECoW.

5.3 Relevant site documentation and project information sources should be updated with new and amended information on constraints as it is produced, with changes communicated to appropriate staff immediately.

6 Mitigation Hierarchy

There is a general presumption against works being carried out which could destroy wood ants. A hierarchical approach to mitigation of Avoidance – Relocation will be applied nest that may be affected (See Figure 2.1):

6.1 Avoidance

6.1.1 This is the preferred option for nests identified within construction areas. A protection zone of at least five metres around the nest should be marked and signed on the ground with appropriate material to restrict work access. This protection zone may need to be larger depending on size of nest and activity of workers around the nest. The protection zone should ideally take into consideration significant foraging routes, and 'foraged' trees if these are present to avoid a large number of workers being harmed.

6.1.2 Protection zones must be maintained until works are completed. Site staff should be briefed of their purpose through a Toolbox Talk and works micro-sited out with the protection zone.

6.2 Relocation

6.2.1 Where avoidance is not possible, the following wood ant relocation protocol shall be followed.

6.2.2 Wood ant species have different habitat requirements. The microhabitat of the affected site must be surveyed to include aspect, slope, elevation, hill-shading, canopy, location and size of trees etc. Potential receptor sites that match these requirements must be identified.

6.2.3 Wood ants are territorial and will compete with the same and other ant species. Territory differs between species but may be up to 100m from the nest. As such a survey for other ant nests within 100m of potential receptor sites will also be undertaken.

6.2.4 Wood ants are active throughout the summer, while queens hibernate during winter. These are sensitive times for the colony and relocation should not be undertaken at these times.

6.2.5 The relocation of narrow-headed ants should be avoided where at all possible as current evidence suggests a high risk or probability the nest will fail if it is relocated. Relocation should only be considered as an emergency last resort when a nest is threatened with likely imminent extinction if there is no intervention.

6.2.6 The optimum time for relocation of F. aquilonia and F. lugrubis is Spring, however it is possible in Autumn. The optimum time for relocation of F. exsecta is late summer (after August) to late autumn. The optimum temperature for relocations is between 5 to 10ºC.

6.2.7 Relocation must be carried out in fine weather and be followed by at least several days of similar weather, so that the ants can organise themselves and set about nest building. It is crucial therefore to watch for weather forecasts during the relocation season, so that optimum conditions prevail.

6.2.8 All relocations must be supervised by the ecologist / ECoW to tackle any issues arising.

6.2.9 Prior to relocation preparations are essential and include:

- The ecologist / ECoW undertaking a site survey to identify a suitable resettlement location away from construction activities. The potential resettlement site(s) should be visited in advance at different times of the year. A site which appears suitable in winter may have a completely unsuitable state in summer, and vice versa. Unsuitable factors principally include excessive shading and/or potential water-logging due to poor drainage, lack of food-source trees etc
- When deciding on a new location the following factors should be considered:
  - It should preferably have an open southerly aspect, free from shading overgrowth and with good drainage. If necessary, any shading vegetation should be cleared or thinned. A focal point for nest building, such as an old stump or decaying tree trunk or boughs, should be present, or artificially added if not. Twiggy 'brash' added over the stump or boughs will serve to provide a framework for nest building
  - It should be as similar as possible to the source site
  - It should be in a location that facilitates monitoring for as long as possible
  - Suitable tree and shrub species must be present to provide enough food in the form of honeydew from aphids and other plant-lice
  - Prepare the resettlement site by excavating a hole to at least the same size (nests can extend one metre below ground depending on the size of the nest, and underground components usually mirror those above ground)
- The ecologist / ECoW undertaking a detailed Toolbox Talk in advance of the relocation works to all personnel involved

6.2.10 When planning for relocation there are two possible methods, as outlined in Table 6.1 and below.

Table 6.1 - Planning for Relocation Methods

Method	Strengths	Weaknesses
Hand Tool Method	Less reliance on retaining nest architecture. Can allow nests to be moved in a vehicle to a distance resettlement site. Can work for any size of nest and particularly useful for large nests where digging whole nest is not feasible. Can be done using hand tools and at sites when access for machinery is not possible	Results in total loss of nest architecture, though the "layers" of material are still retained. Relies on the ability of the ants to rebuild the nest structure and thatch which they can do surprisingly quickly depending on size of colony and time of year. Best timed to seasons when the ants are active and able to recover (i.e., not immediately before hibernation and cold spells of weather).

Method	Strengths	Weaknesses
Excavator Method	Can retain nest architecture if done carefully Can make use of machinery that may already be on site.	Should only be used when nests are being moved very short distances, to avoid loss and damage to nest whilst being carried in excavator bucket. Best suited to small-medium sized nests.

6.3 Hand Tool Method

6.3.1 Tools to be used include spades, shovels, and possibly saws or axes (if roots etc are a problem). Nest transfer into the sack should preferably be done using wide, flat coal-type shovels, which are less potentially damaging than sharp digging spades. Organic Hessian-type potato sacks make the best containers, and the use of plastic sacks must be avoided. String or similar cord is necessary to tie up each sack as it is filled. Sixty litre plastic barrels with lids have also proven successful, and could be considered for this method.

6.3.2 When using hand tools shovel up as much of the massed ants and material as possible, in as few scoops as possible, in order to minimise the time taken and the disturbance to the ants. Work down as far as the soil structure will allow. Do not over-fill each hessian sack, which could lead to some crushing at the bottom, and try to include some small branches etc to alleviate pressure. Tie up each sack as quickly as possible after filling.

6.3.3 Keep the time between removal of the ants from the old location and their release at the new location as short as possible.

6.3.4 Untie the sack(s) and carefully tip the ants and nest material over the prepared nest site. After the bulk material is emptied, there will still be many ants clinging to the inside (and outside) surfaces of the sack, which should be shaken vigorously to dislodge as many as possible. The sack should be turned inside out, and then cut into two or three sections which can be placed and left on and around the nest heap. This will enable all the ants to keep together, and also ensure that any other small creatures, such as myrmecophilous beetles etc, which might be clinging to the sack, will be able to remain with the ants. The Hessian sack material will add to the overall nest framework and will eventually rot away.

6.4 Excavator Method

6.4.1 Prepare the route between the old location and resettlement site. A trial run should be undertaken to identify and remove hazards when not using existing roads or tracks prior to relocation.

6.4.2 Ensure the excavator slowly moves to the ant nest and excavates the entire nest using the bucket (ensuring minimal damage to the nests architecture occurs).

6.4.3 Care needs to be taken to ensure the nest is kept as intact as possible and where possible move the nest as one complete unit to maintain nest architecture.

6.4.4 Once the nest has been excavated ensure the bucket is covered in thermal breathable fabric coverings to help retain heat within the nest, should the transport take longer than 30 minutes. This covering will assist in preventing any ant's falling out of the bucket during transit. The excavator shall move the nest as slowly and steadily as possible (around 2.5 miles per hour).

6.4.5 Ensure the excavator places the bucket containing the ant nest into the resettlement site, ensuring retention of the nest aspect. The bucket is to be retracted slowly, ensuring the nest is gently placed into the resettlement site and limits damage of the internal structure of the nest.

6.5 Post Excavation (either method)

6.5.1 After the nest has been excavated, the excavation site should be checked by the ecologist / ECoW for any significant number of ants, ant queens or signs of nest architecture (nests can extend one metre below ground depending on the size of the nest, and underground components of the nest usually mirror those above ground). These should be gathered and taken to the resettlement site.

6.5.2 If the relocation site is in proximity to construction activities a protection zone of at least five metres around the nest should be marked and signed on the ground with appropriate material to restrict work access. This protection zone may need to be larger depending on size of nest and activity of workers around the nest. The protection zone should ideally take into consideration significant foraging routes, and 'foraged' trees if these are present to avoid a large number of workers being harmed.. If the nest is out with the construction area it should be clearly marked so it can easily be located for monitoring.

6.5.3 Where badgers are known to be present physical barriers may be required for the first year after relocation to prevent the nest being damaged or destroyed.

6.5.4 Provide supplementary sugary food (e.g. bee food dough, honey-breadwater mash, or jam) at the receptor site daily for first two weeks post-move to ensure long term success in the new site.

6.5.5 During the initial days after the relocation the old location should be checked if possible, and if necessary, remaining ants should be collected and moved to the resettlement site.

7 Monitoring

The ecologist / ECoW will attend site on a regular basis throughout the construction period to ensure all environmental mitigation relevant to wood ants are delivered, including:

- food supply – have the ants set up foraging routes to a foraged tree(s), which may harbour an aphid colony?
- If not, then further supplementary feeding may be required
- are the ants active and remained where they were relocated with evidence of thatch repair and/or growth in the size of the nest?

- have the ants moved to a new site of their own choosing? This often happens, sometimes after an initial period (lasting a few days to perhaps a week or so) of stability and is not a problem unless the uncertainty becomes prolonged
- where protection measures around the relocated nest have been installed, as described above, does this require to be modified and/or repaired?
- It is not unusual for the population to appear to be significantly reduced in the next season after relocation. This is due to losses during the previous year and over the winter, caused by physical injury, predators and/or 'shock' – older workers in particular may not adjust to their new surroundings. If all is well, however, losses are made up during the succeeding months and years. To ascertain success / failure, the nest shall be monitored through the first season and in the April of the following season. For the purposes of monitoring the following process is recommended as a minimum:
    - following relocation supplementary feeding should be undertaken daily for the first two weeks
    - in the third week following relocation check whether the ants have established foraging routes and decide whether to continue supplementary feeding or not
    - a month later check whether the nest has been damaged or had major disturbances
        - If so, protection measures to prevent further damage or disturbance should be considered
    - where protection measures to prevent damage by badgers are installed they can be removed after one year
    - in April of the season following relocation determine short-term success / failure to ascertain if there is any learning that can be used to update / amend the relocation process. If so, this should be reported to the SSEN Transmission Consents and Environmental Manager for the project

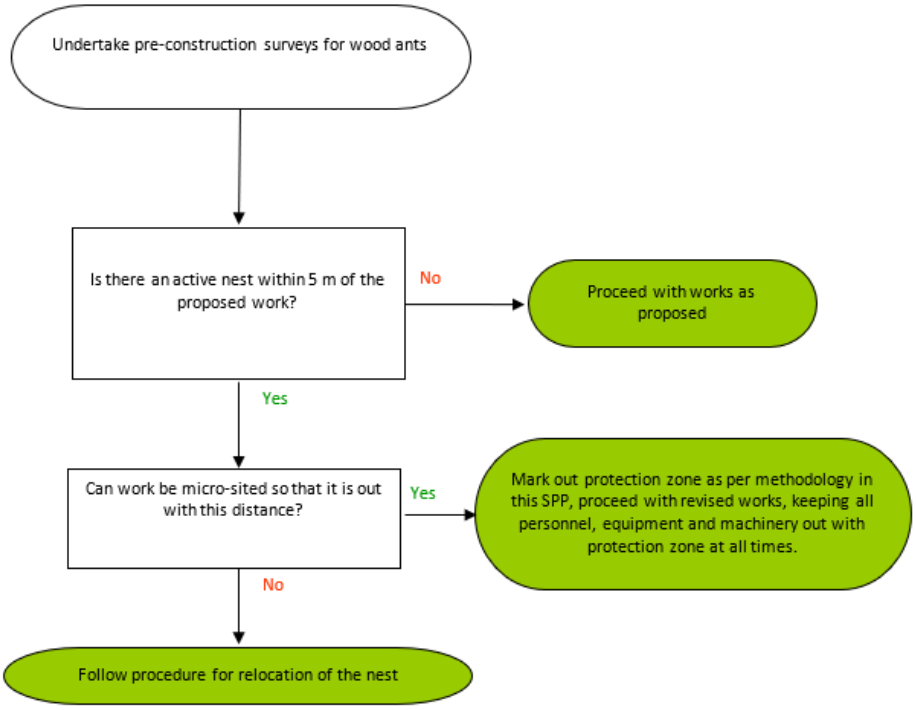

Figure 7.1 - Wood Ant Mitigation Decision Tree

8 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	Created after review by Hayley Wiswell (Cairngorms National Park), Athayde Tonhasca (NatureScot) and Jenni Stockan (James Hutton Institute)	n/a	1.00	Richard Baldwin
02				

Scottish & Southern Electricity Networks

TG-NET-ENV-510

Environmental

General Environmental Management Plan (GEMP)

- Oil Storage and Refuelling

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Environment

Contents

1 Introduction

1.1 Oil and fuel inappropriately used, stored or disposed of can give rise to pollution of the environment.

1.2 Oil and fuel can be released into the environment through:

- Spillages during delivery or use
- Spillages during refuelling operations
- Loss during attempted theft or vandalism
- Spillages from hose bursts
- Spillages from mechanical failure of plant and their components
- Inadequate or damaged storage facilities, or
- Being poured directly to drains or gullies or being burned

1.3 Petrol, diesel and oil are all highly harmful to plants, animals and humans. If pollution is caused, prosecution may follow. The resultant cost of clean-up and legal proceedings following an incident is likely to far exceed the cost of putting proper control measures in place.

2 Legislation

2.1 The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) apply to any kind of oil including petrol, diesel, mineral oil, heating oil, lubricating oil, waste oil, vegetable and plant oil (except uncut bitumen) stored above ground at premises such as construction sites.

2.2 The relevant provisions of Waste Management Licensing Regulations 1994 (as amended) also apply to handling and storage of waste oil.

2.3 The carriage of diesel, kerosene and petrol by road is regulated by The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009), as amended.

3 General Compliance Requirements

3.1 General

3.1.1 Compile a protocol for oil and fuel storage & operations on site, including but not limited to, bulk fuel delivery procedure, refuelling procedure, fuel storage inspections (including spill kit & plant nappy provision and condition) & emergency response procedures.

3.1.2 All those undertaking or involved in refuelling operations should be nominated on the project as Refuelling Marshals and trained in the approved refuelling procedure.

3.1.3 Suitably sized and fully stocked spill kits of the appropriate type are to be located and maintained at all oil & fuel storage locations, refuelling locations and in all site vehicles. Plant nappies must also be available at all refuelling locations for use during refuelling procedure.

3.1.4 Used spill kit materials should be removed as Special Waste. Stocks of spares are required to be held on site to ensure restocking and replacement can occur in a timely manner.

3.1.5 Where a plant nappy is of two part design the use of plant nappy liners without plant nappy base, or plant nappy base without liner is not acceptable as their performance will be compromised.

3.1.6 All oil loss events such as spillages, hose bursts etc must be reported in line with Scottish and Southern Electricity Networks (SSEN) reporting procedures.

3.2 Deliveries & Storage

3.2.1 Oil and fuel storage areas should be clearly designated and shown on site layout and drainage plans clearly presented on site and briefed during site inductions. Tool Box Talks are to be used to communicate changes and periodically remind operatives on oil and fuel storage, refuelling procedures and emergency response requirements.

3.2.2 During delivery of fuel or oils by a supplier to site, the delivery vehicle must be supervised by a suitably trained Refuelling Marshal when on site. Volume and type of fuels delivered and stored on site should be recorded along with dates of delivery.

3.2.3 The following will be considered as a minimum when identifying the location for fuel storage:

- Maintaining a minimum of 30m from sensitive environmental receptors such as surface waters, surface drainage systems, wetlands, Groundwater Dependent Terrestrial Ecosystems (GWDTEs), drinking water or private water supply catchments
- Fuel stores must be sited away from where they could be hit by moving vehicles and plant whilst ensuring ease of access to proposed storage area for oil deliveries / refuelling
- Ensuring suitability of ground conditions e.g. can the area be protected against flood damage / inundation / subsidence
- Use existing oil interceptor facilities, bunded storage areas or suitable areas of hardstanding , and
- Locate areas to prevent risk of theft or vandalism

3.2.4 Clear signage should be provided at oil storage areas and designated fuelling areas.

3.2.5 Clearly identify any areas where fuelling or fuel storage is not permitted on site plans (e.g. within close proximity to watercourses). Where appropriate consider additional signage highlighting and defining exclusion zones.

3.3 Fuel and Oil Storage Containers

3.3.1 All fuel or oil storage containers must:

- Adhere to all and any conditions of the Controlled Activities Regulations (CAR)
- Be of suitable type for that fuel or oil
- Be appropriately labelled identifying the contents
- Be of enough strength and structural integrity to ensure that it is unlikely to burst or leak in its ordinary use
- Be maintained in good condition
- Not filled beyond design capacity
- Be impermeable to oil or water, and
- Positioned, or other steps taken to minimise any risk of damage by impact so far as reasonably practicable

3.3.2 Storage of fuel within 50 gallon/ 200 litre drums is not permitted on site. Where waste oil is stored in this equipment it should be for minimal duration and the drum should be placed within a suitably sized bund.

3.3.3 For fuel storage containers of 200 litres or greater these must be checked for compliance with General Binding Rule 28 of the Controlled Activity Regulations.

3.3.4 Secondary containment or bunds are required where storage of oil or fuel is within containers over 200 litres. This secondary containment must be checked and maintained regularly, with any liquid or materials within emptied/ removed and suitably disposed of to retain required volume.

3.3.5 The storage of oil or fuel in a portable container with a capacity of less than 200 litres must:

- Be securely sealed when not in use so as to contain the fuel in event of tipping of the container
- Be secured during transit within a vehicle so as not to slide, tip or otherwise be put at risk of damage
- Where being stored for any period longer than a day between use, be placed within suitable bunded Control of Substances Hazardous to Health (COSHH) containment when not in use, and
- When not stored within a bunded COSHH container, the container should be stored securely on a plant nappy, away from any sensitive receptors such as watercourses

3.4 Refuelling

3.4.1 The following must be adhered to for refuelling operations:

- Refuelling operations are to be included within the preparation of a protocol for oil and fuel storage & operations on site

- Undertake refuelling at appropriately sited and set up designated refuelling bays
- Where this is not possible for operational reasons, refuelling should not be undertaken within 30m of surface waters and should follow the above guidance regarding location of any fuel related activities
- Suitably sized spill kits must be easily accessible for all re-fuelling operations and drip trays / plant nappies used during refuelling operations to catch drips and splashes

3.5 Construction plant

3.5.1 Plant nappies should be placed under stationary plant and equipment such as oil powered pumps, generators, winches, hydraulic presses, compressors, lighting rigs (where these items are not "integrally bunded"). Hydraulic powered plant such as presses, winches or tensioners may require additional mitigation such as further plant nappies or impervious drip trays.

3.5.2 Whilst plant nappies do not provide significant containment capacity, they are easier to manage than impervious drip trays which require increased maintenance to ensure rain water is not contaminated and require to be regularly emptied of rainwater to ensure effectiveness.

3.5.3 Static plant should be located at least 30m from any watercourse (or other identified sensitive receptor). Where it is not possible, mitigation should be put in place to reduce the risk or impacts of a pollution incident occurring (including additional capture methods for losses, increased inspection visits of the plant or placement of oil booms).

3.5.4 Plant nappies are to be placed under mobile plant on site when parked up, for example during breaks, overnight or longer periods. A plant nappy will be assigned to each piece of plant and placed under the area of the plant considered the greatest risk, for example this may be under the engine bay (if unbunded) or under the hydraulic pumps or flexi hoses. Stones maybe placed on the plant nappy to prevent it being blown away in strong winds.

3.5.5 Plant nappies should be regularly inspected as part of plant pre-use checks and during other site inspections and should be replaced (or their liners replaced) when deterioration and/ or contamination is evident.

3.6 Further information

3.6.1 Further information is available from (but not limited to):

- SEPA The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) - A Practical Guide
- CIRIA (2005) C650 - Environmental Good Practice – site guide
- CIRIA (2006) C648 - Control of water pollution from linear construction sites – Technical Guidance
- https://www.hse.gov.uk/cdg/commonproblems/bowsers.htm

- https://www.gov.uk/government/publications/carriage-of-dangerous-goods-guidance-note-23

4 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New document created	N/A	1.00	Richard Baldwin
02				

Scottish & Southern Electricity Networks

TG-NET-ENV-511

Environmental

General Environmental Management Plan (GEMP)

- Soil Management

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Delivery

Contents

1 Introduction

1.1 Soil is a precious resource and can provide the following functions:

- Supports a diverse ecological system and provide the growing medium for crops and timber;
- Provides a carbon sink and plays an important role in carbon sequestration;
- Absorbs rainfall, delaying its movement into watercourses;
- Filters or transforms chemicals that pass through it, preventing them from ending up in water or air.

1.2 Any damage to soil quality affects the long-term functioning of the soils and has an impact not only on ecological diversity, performance and visual amenity, but can have impacts off-site such as on flooding, aquifer recharge and water quality.

1.3 It is therefore essential that impacts to the resource are reduced to the minimum necessary for the works and that all work is undertaken in accordance with best practice. The methods of stripping, storage, reuse and disposal of soil can have significant impacts on both the soil resource and other environmental receptors.

2 General Compliance Requirements

2.1 General Principles of Soil Management Process

2.1.1 All stripping should follow this process, except in agricultural fields whereby the method should be informed by landowner requirements, or where archaeological concerns exist and smooth buckets maybe preferable:

- Turfs stripped to 300mm using large toothed bucket;
- Turfs stored vegetation side up and watered if drying out;
- Any remaining top soil and all subsoil layers to be removed and stored separately;
- Subsoil, topsoil and turfs replaced in same order as removed;
- Turfs reinstated vegetation side up;
- The toothed bucket should not be used to smooth over the excavation as it results in greater initial damage and slower recovery of the vegetation.

2.2 Stripping

2.2.1 Plan soil stripping carefully in advance.

2.2.2 Check whether the project archaeologist should be on site during the soil stripping.

2.2.3 Check all necessary pre-construction surveys have been completed prior to stripping (e.g. preconstruction protected species surveys in line with Species Protection Plans).

2.2.4 Follow all identified mitigation requirements for the location and method of stripping.

2.2.5 Where possible, strip soil during drier periods. Do not strip soil during periods of very heavy rainfall.

2.3 Storage

2.3.1 Topsoil should be stripped and stored within the pre-identified and agreed areas to ensure safe storage and swift and successful reinstatement.

2.3.2 If soil storage is being carried out on sensitive habitats, consideration should be given to storage on top of a geotextile mat with duration of storage minimised.

2.3.3 Topsoil must not be mixed with subsoil or other layers with a requirement for separate storage areas for each.

2.3.4 Record and 'signpost' where all removed soils are stored including the different subsoil layers (this is important as individual subsoil layers should be reinstated in the order in which they were removed).

2.3.5 If the storage is likely to be for an extended period (for example >6 months) it may be appropriate to store topsoil layered on top of subsoil bunds. Underlying turfs (and topsoil) at the storage location should be removed in advance with turfs stored on surface of the bund.

2.3.6 Soil storage areas should be located away from watercourses (minimum 10m) and protected from run-off from adjacent areas.

2.3.7 Storage bunds should be designed so the material is stable and unlikely to slip, slide or slump. Consider the risk of any adjoining topography, (e.g. avoiding storing soils near steep slopes or banks, or in areas at high risk of flooding.

2.3.8 Best practice should be applied in order to minimise the amount of compaction or other disturbance of the general structure of the superficial deposits.

2.3.9 Other site works should not impact on stored soil (e.g. Construction traffic must not track over stored soils).

2.3.10 Careful planning of storage areas and required works must be undertaken to avoid multiple handling of stored material and moving of stockpiles.

2.3.11 The surface of material storage bunds (not turfed as detailed above) can be smoothed with bucket to aid surface water run off to reduce potential for erosion. If significant soil erosion is occurring from storage piles during periods of heavy rain, consideration should be given to covering the stockpiles, with terram or other suitable material.

2.3.12 In periods of dry weather check the need for dampening down to reduce dust and potential nuisance.

2.3.13 If any stored soil is contaminated it should be managed in accordance with the Contaminated Land GEMP.

2.3.14 After removal of stored material, storage areas should be reinstated to the pre-existing condition.

2.4 Reinstatement

2.4.1 Stripped soil should be reinstated as close to where it was removed as possible. This will help to maintain a local seed base and the local geological/ hydrological characteristics.

2.4.2 Unless otherwise agreed, turfs should be reinstated following the works and orientated vegetation side up.

2.4.3 Where turfs are not available, areas would be left to revegetate naturally unless circumstances require otherwise, or vegetation is unlikely to establish within a reasonable timescale. Any seeding or replanting must be agreed in advance, including details of seed mixes and management regimes. Other techniques maybe more appropriate depending on the habitat to be reinstated.

2.4.4 The reinstatement of the construction area is to be undertaken to a high standard, using the existing soil and vegetation material wherever possible, in accordance with best practice.

3 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New document created	N/A	1.00	Richard Baldwin
02				

Scottish & Southern Electricity Networks

TG-NET-ENV-512

Environmental

General Environmental Management Plan (GEMP)

- Working in or Near Water

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Delivery

Contents

1 Introduction

1.1 Construction activities in or near water have the potential to cause serious pollution or impact on the bed and banks of a watercourse and on the quality and quantity of the water.

1.2 Engineering works can cause damage to the habitat within rivers, lochs and wetlands, with associated impacts on invertebrates, plants, birds and mammals. Engineering works can also block the passage of migrating fish and damage spawning habitats during sensitive times.

1.3 Major causes of environmental harm associated with working in or near watercourses include:

- Silt e.g. disturbance of river bed or bank, dewatering and pumping of excavations, run-off from exposed ground, plant washing, roads and river crossings;
- Cement and concrete – which is very alkaline and corrosive and can cause serious pollution;
- Chemicals and solvents – oil storage, refuelling, trade materials etc;
- Herbicides – aerial and non-aerial applications; and
- Waste materials (including special waste) e.g. oily wastes, spent acids and solvents.

2 Legislation

2.1 There are a number of activities which pose a risk to the water environment including:

- Discharges to the water environment;
- Abstractions; and,
- Physical works within, and in proximity to controlled waters.

2.2 The Water Environment (Controlled Activities) (Scotland) Regulations 2011 – more commonly known as the Controlled Activity Regulations (CAR) sets out authorisations that are required for different activities in or near the water environments (including rivers, lochs, estuaries and groundwater).

2.3 Levels of authorisation include General Binding Rules (GBR), Registrations and Licences the most significant of which is a Construction Site Licence (CSL). A CSL is required for any project that:

- Exceeds 4 hectares in area;
- Contains a road or track length in excess of 5km; or
- Includes any area of more than 1 hectares or any length of more than 500 metres on ground with a slope in excess of 25 degrees.

3 General Compliance Requirements

3.1 General

3.1.1 Plan all works in accordance with best practice.

3.1.2 Ensure all necessary authorisations under the Controlled Activities Regulations (CAR) are in place.

3.1.3 Identify all activities that will be undertaken in or near watercourses (including all identifiable drainage paths).

3.1.4 Avoid works within 10m of a watercourse unless no other practical options exist and leave a vegetated buffer strip.

3.1.5 Where works are undertaken within 10 m of any watercourse or drain, ensure specific pollution prevention controls are in place.

3.1.6 Communicate risks associated with working in or near watercourses to all personnel and include control measures in the site-specific construction method statements.

3.1.7 Keep site tidy and do not store materials too close to watercourses or surface water features.

3.1.8 Ensure that all watercourses are routinely monitored for changes in water quality. If water quality deteriorates, stop works, identify the source of the problem and implement appropriate mitigation measures.

3.2 Watercourse Engineering

3.2.1 Seek to avoid or minimise watercourse engineering works wherever possible.

3.2.2 Vehicles should not work within the water unless no other reasonable options exist.

3.2.3 All construction machinery operating in-stream should be mechanically sound to avoid leaks of oils, hydraulic fluid, etc.

3.2.4 Machinery should be thoroughly cleaned and checked prior to commencement of in-stream works.

3.2.5 All reasonable steps shall be taken to prevent the transport of sediments or other matter disturbed by the works.

3.2.6 Ensure all required pre-construction surveys have been completed before starting works (these will include, where appropriate, fresh water pearl mussels, otter, water vole).

3.2.7 Check if there are any timing restrictions to works because of protected species (e.g. spawning salmonids, otter, water vole etc) or landowner commitments.

3.2.8 Any temporary dams used should be designed to accommodate periods of high watercourse discharge and dried out sections of bed should be check for stranded fish. Any stranded fish or other wildlife must be immediately translocated to suitable nearby habitat.

3.2.9 Pumps should also be fitted with screens to prevent fish mortalities and ingress of debris, and the outfall to pumps be designed to prevent erosion of the receiving waters (i.e. by dissipating the flow). Back up pumps should be available.

3.2.10 Where stock has access to the works fencing may be necessary to allow the regeneration of native riparian and aquatic marginal vegetation.

3.3 Surface Water Control

3.3.1 Locate areas of high-risk activities away from watercourses and drainage paths. Areas of high risk include:

- Fuel and chemical storage;
- Refuelling areas;
- Material stockpiles;
- Vehicle and equipment washing areas;
- Site compounds / parking areas.

3.3.2 Minimise the volume of contaminated run-off being created by:

- Diverting clean surface water away from areas using cut-off drains, catch pits and bunds (where necessary these can be lined);
- Do not allow water to drain down the length of a haul road. Roads should have adequate cambers to shed water quickly and if necessary cut-off drains installed across the road;
- Minimise erosion of exposed soils and working areas;
- Reduce the exposed working area through phased construction;
- Reinstate exposed soil as soon as practical;
- Roughen exposed surfaces to reduce rate of water run off;
- Prevent water from leaving site prior to treatment;
- Ensure adequate buffer zones are identified between working areas and surface waters;
- Diversion drains should be used to catch sediment laden run-off and direct it to treatment facilities such as settlement ponds (where necessary these can be lined), silt fences, settlement tanks etc (see CIRIA C6848);
- Maintain all mitigation measures regularly to ensure their effectiveness;
- Depending on the level of contamination, silty water can be pumped over land to filter through vegetation and infiltrate into the ground provided it is carried out in line with the CAR regulations. An appropriate buffer distance must be agreed to allow sufficient distance for the vegetation to filter the silty water prior to reaching a watercourse;
- Ensure construction works minimise disturbance to the current run-off regimes.

3.4 Vegetation Removal

3.4.1 Trees and shrubs should not be removed without agreement.

3.4.2 Avoid un-necessary vegetation removal.

3.4.3 Where necessary leave a vegetated buffer distance of 10m between works and a watercourse.

3.4.4 Only break the ground surface when works are required and initiate a phased approach.

3.4.5 Comply with agreed buffer zones of vegetation as this will allow further treatment of surface water.

3.4.6 Do not dispose of cleared vegetation into the watercourse and avoid debris from clearance.

3.4.7 Vegetation removal can impact on bank stability and increase erosion. Ensure that all banks are restored to a condition prior to works commencing and assess what further protection may be required.

4 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New document created	N/A	1.00	Richard Baldwin
02				

Scottish & Southern Electricity Networks

TG-NET-ENV-513

Environmental

General Environmental Management Plan (GEMP)

- Working in Sensitive Habitats

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Environment

Contents

1 Working in Peatland and Sensitive Habitats

1.1 Introduction

1.1.1 This General Environmental Management Plan concentrates on sensitive habitats associated with Peat, Blanket Bog, Wet Heath and Dry Heath habitats.

1.1.2 Section 3 of this General Environmental Management Plan includes guidance specific to peat management and the preparation of Peat Management Plans where on-site activities impact on peat. Site specific measures should be developed before construction begins at any location where working in peat is a constraint.

1.2 Legislation

1.2.1 Sensitive habitats may include those Scheduled under Annex 1 of the Habitats Directive. The Habitats Directive is more formally known as Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, a European Union Directive adopted in 1992. Sensitive habitats may more widely be defined as habitats where additional care is required to avoid permanent damage or to reinstate to the previous condition.

2 General Compliance Requirements

2.1 General

2.1.1 Whilst working within sensitive habitats or peatlands follow best practice from SNH and SEPA.

2.1.2 When working in areas with sensitive habitats, the hierarchy of avoid, minimise, mitigate and manage must be applied.

2.1.3 Where possible areas of development such as cable routes, access tracks and tower positions should be micro-sited within permissible limits to minimise impacts on areas of sensitive habitat and areas of deep peat.

2.1.4 Stripping areas of sensitive habitat and peatland should be kept to an absolute minimum and done in consultation with the environmental representative.

2.1.5 During planning and implementation consider how the site will be restored or reinstated on completion of the works.

2.1.6 Ensure adequate corridors / areas are allowed for water management and reinstatement works which may include sourcing donor material from adjoining areas in some instances.

2.1.7 Consider effects of local hydrology factors (drainage, watercourses, flushes, bog pools, peatlands etc) on established habitats and seek to maintain hydrology regimes during the works.

2.1.8 If hydrological impacts cannot be avoided, or significantly mitigated through design and implementation, ensure hydrological connectivity is re-established as soon as possible. Ensure development or reinstated areas do not form preferential drainage.

2.1.9 Areas where rain water has been flowing over the ground surface should be identified in advance of works.

2.1.10 Design drainage channels or pipe systems to conduct water across cable trenches (or areas where tracks have been removed and ground reinstated. This will minimise post-construction damage and to allow better opportunities for re-vegetation and successful reinstatement. Any drainage pipes should be removed once vegetation and stabilisation of original drainage has been established.

2.1.11 Undertake post-installation inspections to identify any areas where surface water flow is causing soil erosion.

2.2 Access

2.2.1 Access across sensitive habitats must be done as efficiently as possible, avoiding unnecessary movements back and forth.

2.2.2 Agree an Access Strategy and details of all access routes with the environmental representative ahead of works, avoiding impacts on peatland or sensitive habitats as far as possible. Where All Terrain Vehicles (ATVs) are proposed consider the trade-off of changing access route as ground becomes damaged, to maintaining one access that subsequently requires reinstatement / restoration.

2.2.3 Where no existing access tracks exist, seek to use temporary trackway solutions including trackway panels (E.g. Terrafirma Dura-Base or Trackway), timber log mats or bog mats when transiting sensitive habitats or peatlands. Where plant and terrain do not suit the use of temporary access panels type solutions, temporary floating stone roads may be needed.

2.2.4 Access across unprotected peatland or other sensitive habitats should be restricted to low ground pressure vehicles and plant only (i.e. suitable ATV- argocat or Soft track, or wide spread tracked machines), and should avoid rutting.

2.3 Access Track Construction

2.3.1 Design of works should avoid the potential for concentrated discharges of water onto the hill slopes. In particularly susceptible areas, the use of drainage ditches may be necessary upstream of the construction corridor. These should be installed following advice from hydrological specialists and in agreement with project environmental resource.

2.3.2 Ensure adequate drainage is installed upfront across tracks upfront (temporary or permanent access tracks) through use of culverts at regular intervals (including where there may not be obvious watercourses). Culverts should be installed in compliance with Controlled Activities Regulations (CAR) requirements.

2.3.3 Working in areas of peatland should be avoided, as far as practicable during times of the year with the highest rainfall. Stripping of peat and reinstatement works should stop during periods of sustained heavy rainfall.

2.3.4 During the reinstatement of sensitive habitats, it may be necessary to utilise living donor turfs from land either side of the development and to reworked acrotelm from land adjoining the works corridor to prevent formation of preferential drainage.

2.3.5 Across areas of deep peat and other sensitive habitats, floating roads are generally preferable, especially where temporary. The formation of temporary access tracks should be underlaid with geotextile and geogrids. This should exceed the width of the track formation to avoid overspill of stone onto adjoining habitat and to assist in separation of the track construction materials from the underlying soils.

2.3.6 Where excavation is required, a tracked excavator should first remove turfs to a depth of 300 mm using as large a toothed bucket wherever possible. (This may not be appropriate where archaeological interest exists, and smooth buckets are specified).

2.3.7 Turfs, peat and subsoil should be stored separately in line with Soil Removal, Storage and Reinstatement General Environment Management Plan.

2.3.8 Turfs and soil should be stored to the side of the excavation. Where this is on good quality blanket bog storage should be on top of a geotextile membrane.

2.3.9 Turfs should be stored root side down and should remain in the storage location until required for reinstatement (this is to avoid multiple handling and reduce the potential for turfs becoming unstable).

2.3.10 Subsoil layers and peat layers should be reinstated in the order they were removed, and the turfs should be reinstated root side down.

3 Peat Management

3.1 General peat management requirements

3.1.1 In addition to the unique habitats provided by peatlands, areas of deep peat have a significant global role in carbon sequestration. Disturbing peat can release CO_2 to the atmosphere as the peat is oxidised when exposed to air or dried out. Through proper management of peat these impacts can be reduced

3.1.2 It is important to ensure the hydrological regime of peatland is maintained and that peat is not left unprotected to avoid erosion and degradation. Avoid unnecessary drainage of peatlands. Any temporary cut off ditches should be back filled as soon as practical on completion of works.

3.1.3 Ensure that large loads do not compress peat and create a barrier to water movement which could cause ponding at one side of the corridor and drying out at the other, or cause peat slump by displacement. Peat Slide risk assessments may also be required by the project.

3.1.4 Existing degraded peatland can often be stabilised or re-established to active peatland with minimal effort and opportunities to undertake such works should be investigated where possible.

3.2 Peat Management Plans

3.2.1 Where significant impacts on peat are identified, or peat depth is greater than 0.5 metres, a site or project specific Peat Management Plan (PMP) may be required and should be agreed prior to the construction phase. The PMP must be developed with input from the environmental representative and may require stakeholder input.

3.2.2 In certain circumstances a Peat Management plan may be required as a condition of consent or specifically specified as a contract deliverable. In these circumstances the content must reflect that required by the consent or contract.

3.2.3 The Peat Management Plan, as a minimum should:

- Include and adhere to principles set out in best practice and guidance notes from SNH and SEPA, including SEPA's guidance note WST-G-052 -Developments on Peat and Off-Site Uses of Waste Peat
- Include detailed OS background-based plans with site location insets, detailing peat depth maps, highlighting areas of deep peat, storage areas and any areas suitable for restoration / reinstatement
- Reference peat depth maps, identify how impacts on peat have been minimised and quantify types and volumes of peat anticipated to be disturbed by the project
- Identify appropriate storage of peat for reuse (during reinstatement for example). In line with Soil Removal, Storage and Reinstatement GEMP
- Identify suitable areas for separate storage of excavated strata, including for example, turfs, peat and subsoil. It may also be appropriate to implement different management and storage strategies for the various strata of deep peat, including top vegetative layer and acrotelm, where fibrous living organic matter is still evident, separate to the catotelm, where the structure of the peat is more homogenous and loses its structure more easily
- Detail how the works have been planned to ensure minimal handling of peat. (In moving and reworking peat, the structure can easily be lost making storage and reuse more challenging. Turfs and other peat materials should be stored as close to origin as possible
- Detail inspection regime to ensure peat is regularly checked for signs of drying out and detail planned measures to prevent this occurrence. (If drying out is occurring the storage areas may require to be sprayed with water. Any water abstraction associated with this activity needs to be compliant with the Controlled Activities Regulations (CAR).)
- Identify opportunities for reuse on and off site if required (in peatland restoration for example). Detail plans for reinstatement of stored material, including potential peatland restoration works. During implementation ensure that no bare (unvegetated) peat is exposed as this may take a long time to re-establish, and will be a high risk of degradation and erosion; and
- Include a water management strategy for minimising impacts of construction activities on the peatland

3.2.4 The Peat Management Plan should then be followed during the construction phase, with any required changes agreed as the project progresses

4 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New document created	N/A	1.00	Richard Baldwin
02				

Scottish & Southern Electricity Networks

TG-NET-ENV-514

Environmental

General Environmental Management Plan (GEMP)

- Working with Concrete

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Environment

Contents

1 Working with Concrete

1.1 Background

1.1.1 The chemical reactions that enable fresh concrete to cure are complex. A by-product of these reactions is the production of calcium hydroxide, a highly alkaline chemical that has a pH in excess of 12.

1.1.2 There are a number of sources of alkaline water on construction sites, which include:

- Concrete wash water from cleaning of machinery and tools used with fresh concrete – e.g. chutes, drums, pumps, hand tools
- Cutting or coring of concrete structures
- Hydro-demolition (high pressure water cutting)
- Surface water runoff from newly concreted areas
- The storage or use of Concrete Bound Sand (CBS) in backfilling of cable works
- Leaching form installed cabling works utilising CBS backfill
- Crushed demolition materials, and
- Concrete installed below groundwater level (e.g. piled foundations)

1.1.3 The release of untreated highly alkaline water into the environment from any of the sources described above, can have a significant environmental impact, including on the ecology of receiving waters. The following are potential impacts of concrete and cement born contamination if not properly treated:

- Increase in pH of the water environment to toxic levels
- Kill invertebrate and other aquatic life including plants
- Particles can impact the turbidity of receiving waters
- Smother the bed and kill aquatic life
- Block gills of fish
- Impact directly and indirectly protected species which may be present e.g. otters, freshwater pearl mussels, or salmon
- Increase flood risk or agricultural drainage by blocking of drains and other structures

1.2 Legislation

1.2.1 Under the Controlled Activities Regulations, it is on offence to discharge polluting substances to controlled waters (surface water and groundwater) without prior approval from the Regulator (SEPA). This includes any discharge of concrete/ cementitious materials or contaminated water.

2 General Compliance Requirements

2.1 General use

2.1.1 Concrete shall not be used within 10m of any watercourse or loch. Should there be the requirement to use concrete and cement within 10m of a waterbody, this should be fully risk assessed and agreed in advance of the works.

2.1.2 Store bulk and bagged cement and concrete additives at least 30 metres away from watercourses, gullies and drains in properly secured, covered and bunded areas.

2.1.3 Ensure dust from storage areas is controlled.

2.1.4 Ensure all staff are briefed on the potential environmental risks of working with concrete.

2.1.5 Ensure that any residue from cutting/ coring/ hydro-demolition activities is correctly contained and treated where necessary.

2.1.6 Consider the materials being used e.g. recycled concrete aggregate may cause elevated pH levels as a result of run-off.

2.1.7 Recirculating systems should be used where possible to minimise the use of water resources.

2.2 Washout

2.2.1 Areas should be established for concrete washout which avoid important habitats and species.

2.2.2 Surplus concrete should be removed from equipment by scraping before washing down in order to minimise the volume of water required.

2.2.3 All concrete wash water should be contained for treatment on site or disposal off site. None shall be allowed to enter any drains, ditches or watercourses or land.

2.2.4 Discharge of small volumes to land should only take place where there is no connectivity to surface and ground waters and can be demonstrated to be fully compliant with legislative requirements.

2.3 Treatment Options on site

2.3.1 The pH scale is a logarithmic scale which means that each unit change in pH for example pH 7 to 8 represents a tenfold increase in alkalinity. Because of this, attempting to treat concrete washout by dilution alone has the potential to increase the risk of a serious pollution incident.

2.3.2 Dilution of high pH water is ineffective due to the logarithmic scale of pH. (For example, to dilute one IBC of concrete wash water at pH 12, the equivalent of four Olympic swimming pools of fresh water would be needed to bring it back to neutral (pH 7).

2.3.3 In order to adjust high pH wash water in line with acceptable levels, a process of neutralisation using controlled amounts of reagent may be required. Typical reagents include mineral acid (either sulphuric or hydrochloric acid), citric acid, carbon dioxide (CO_2) and self-buffering solutions. Propriety units for treatment of high pH water on site are available, some of which use CO_2 diffusers to neutralise the high pH water.

3 Revision History

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01	New document created	N/A	1.00	Richard Baldwin
02				

Scottish & Southern Electricity Networks

TG-NET-ENV-516

Environmental

General Environmental Management Plan (GEMP)

- Waste Management

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Delivery

Contents

1 Introduction

1.1 Waste is defined in the in the Waste Framework Directive (75/442/EEC) as "any substance or object which the holder discards, intends to discard or is required to discard". This includes materials that other people want, or for which they can find a beneficial use i.e. material that is to be recovered / recycled.

1.2 In any construction project, there may be a variety of different wastes, from office and canteen waste to construction materials, waste aggregate from temporary tracks, waste oils, asbestos and clinical waste that will require management.

2 Legislation

2.1 Waste legislation and guidance is extensive, complex and works must comply with all the obligations they impose. Key guidance from the Scottish Environment Protection Agency (SEPA), can be found on their waste website (www.sepa.org.uk/regulations/waste). This includes information on core legislation including:

- Environmental Protection Act 1990 (as amended)
- Waste Management Licensing (Scotland) Regulations 2011 (as amended)
- The Waste (Scotland) Regulations 2012 (as amended)

3 General Compliance Requirements

3.1 Principles of Waste Management

3.1.1 Waste management priorities and practical actions that can be undertaken on site should follow the principles of the waste hierarchy as illustrated below:

- Eliminate - Design out waste
- Reduce - Minimise waste generation
- Reuse - Reuse materials on site if possible
- Recycle - Reprocess materials for off-site use
- Recover - Recovery of energy from waste sent off site
- Dispose - Least desirable option – last resort

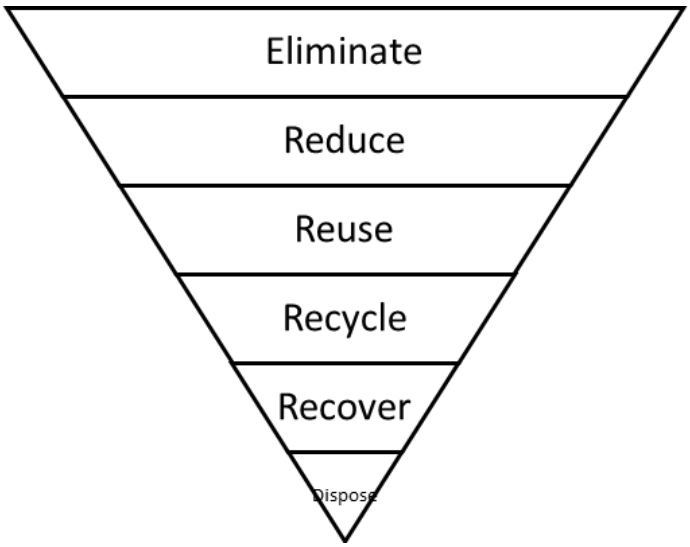

Figure 3.1 – Waste Hierarchy

3.1.2 A Site Waste Management Plan (SWMP) is required to be prepared agreed prior to construction works starting. This plan should be based on the above principles and include the following minimum requirements:

- Waste minimisation;
- Allocate a waste champion – who is responsible for the SWMP;
- Record types and quantities of waste that will be produced during the project;
- Decide how waste arising will be managed in line with the waste hierarchy;
- Plan for efficient materials and waste handling and set reduction targets (KPIs);
- Measure quantities and types of waste produced and compare against targets;
- Monitor the implementation of the SWMP and update as necessary; and
- Compile a waste budget.

3.2 Duty of Care

3.2.1 All those who produce or handle waste have legal responsibilities, a “Duty of Care”, for its safe keeping, transport and subsequent recovery or disposal.

3.2.2 Failure to comply the “Duty of Care” is an offence as it is a legal requirement under Section 34 of the Environmental Protection Act 1990 (as amended).

3.2.3 ‘Duty of Care’ requires the producer to:

- Ensure those transporting waste are registered with SEPA;
- Ensure the waste is being treated, re-used or disposed of at a suitably licensed site in line with current legislation;
- Keep a waste transfer slip for all waste being transported off site;
- Ensure that all waste on site is properly stored and secured;

- Take all reasonable steps to prevent unauthorised handling or disposal by others;
- If you are dealing with hazardous / special wastes, such as asbestos, chemicals, oils or contaminated soils, you have extra legal responsibilities and may be required to complete detailed 'special waste consignment notes'; and
- Should there be uncertainty over whether a waste is hazardous or special, advice should be sought.

3.3 Storage

3.3.1 The site should be kept tidy and free from litter at all times.

3.3.2 Segregation of waste (including metal, plastic, glass, paper and card) at the point of generation should be provided for site offices / welfare facilities and for construction activities by the use of designated storage areas / containers to ensure cross-contamination is reduced.

3.3.3 All storage areas / containers should be clearly labelled to identify the waste type and properties.

3.3.4 Waste storage areas should be appropriately secured to ensure to prevent pollution.

3.3.5 Controls should be in place to prevent wind blow (e.g. covered skips).

3.3.6 All wastes that could leach or be entrained in water should be stored in a sealed container or on an impervious surface with barriers to lateral flow.

3.3.7 Storage of liquid wastes should be stored in a sealed container within a secondary containment system (bund) with 110% capacity of the container.

3.3.8 Keep the duration of storage to the minimum required.

3.4 Special Waste Storage

3.4.1 Containers used for storage of special waste should be inspected weekly for leaks and corrosion.

3.4.2 Take care to separate different types of special waste, e.g. different chemicals that, if mixed, could react.

3.4.3 Written instructions should be available on site for storing and disposing of each type of special waste.

3.4.4 An inventory should be maintained of all special wastes stored on site, detailing quantities and locations.

3.5 Movement

3.5.1 All movement of waste should be undertaken in line with the relevant waste regulations.

3.5.2 Any waste being transported off site should be done so by a registered waste carrier.

3.5.3 A waste transfer note / special waste consignment note should be completed and retained prior to waste leaving the site.

3.5.4 Before waste is allowed to leave site, the producer should ensure that the site it is being transported to is appropriately licensed.

3.5.5 Vehicles transporting waste should be suitably secured so as not to allow waste to escape.

3.6 Reuse, Treatment, Disposal

3.6.1 All re-use, treatment and disposal of waste must be undertaken in line with an appropriate waste management licence (WML) or an exemption to require a waste management licence (WMX), under the Waste Management Licensing (Scotland) Regulations 2011 (as amended).

3.6.2 If it can be proven that the material is not waste, it will not fall within these requirements.

3.6.3 A WML and WMX must be obtained from SEPA prior to undertaking the activity.

3.6.4 No burning of waste is permitted on site.

3.6.5 No fly-tipping is permitted.

4 Further information

4.1.1 Some useful sites on waste management are:

- www.sepa.org.uk
- www.zerowastescotland.org.uk
- www.wrap.org.uk
- www.bre.co.uk
- www.smartwaste.co.uk
- www.ciria.org.uk
- www.netregs.org.uk

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02				

Scottish & Southern Electricity Networks

TG-NET-ENV-518

Environmental

General Environmental Management Plan (GEMP)

- Private Water Supplies

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Delivery

Contents

1 Introduction

1.1 Many construction works, including site investigation works, have the potential to impact on private water supplies (PWS). This can be through either disturbing drainage patterns (horizontally or vertically) or impacting on the quality of the water source. There is also the potential to impact on infrastructure of PWS, with pipes and tanks possibly omitted from service plans.

1.2 Damaging a PWS can have impacts on the health of the users, as well as severe financial and reputational impacts.

1.3 It is required to comply with the following in addition to any specific measures identified associated with the site.

2 General Compliance Requirements

2.1 Pre-construction

2.1.1 All PWS located within 250 m of the proposed works must be identified prior to commencement of any works.

2.1.2 A risk assessment should be undertaken to identify those PWS that have the potential to be affected by the works including consideration of:

- Type and depth of water supply source (e.g. borehole, spring or surface water abstraction);
- Catchment area; and
- Nature of proposed works (e.g. depth and extent of any proposed excavations, potential for pollution incidents / spillage etc).

2.1.3 Should the results of this assessment indicate a risk to the PWS, then mitigation shall be developed for inclusion in a site specific PWS Protection Plan that is discussed and agreed with the PWS owner.

2.1.4 In certain circumstances it may be appropriate to undertake water quality testing of the source or supply, to establish a baseline of current water levels and quality. This should be agreed as part of the PWS projection plan.

2.1.5 Prepare a contingency plan to deliver an alternative water supply (on a temporary or permanent basis) in the event of an unforeseen problem with the existing supply.

2.2 Construction

2.2.1 PWS requiring protection will have specific mitigation developed. Mitigation may include some / all of the following:

- Fence off the PWS intake (to avoid accidental damage and to deter animals) and identify relevant buffer distances;

- Installation of silt mitigation to prevent runoff from works areas entering the PWS. Use a precautionary approach as not all flow pathways may be immediately obvious;
- Avoid undertaking works within PWS catchments during wet weather or when wet weather is forecast as there will be increased surface water flows into the PWS which will be harder to control.
- Low impact access methodologies including the use of track panels where access to works are within the PWS catchment;
- Survey and peg out the route of the distribution main in the vicinity of the construction works and avoid / minimise activity within this area; and
- All site operatives working in the area should be made aware of the location of the PWS and of the sensitive catchment area through toolbox talks or similar, and should be reminded when works take place in this area.

2.2.2 Put in place measures to protect PWS distribution mains where they cross beneath roads / access tracks. These might include:

- Setting the existing pipe work within mass concrete;
- Upgrading or rerouting the existing pipe work;
- Ensuring that there are adequate pollution control and emergency response measures in place to deal with any accidents that could affect a water supply (e.g. spill response or sediment control);
- Implementation of regular, recorded checks on any pipework (visible signs of cracking or other damage); and
- Provision of an alternative supply (temporary / permanent).

2.2.3 Undertake regular health, safety and environment briefings to construction staff. Include information on:

- Presence and importance of water supply intake and distribution main nearby;
- Need to protect these from accidental damage;
- Need to act promptly if an accidental spill or pollution incident poses a threat; and
- Reporting requirements.

2.2.4 Regularly monitor works and their impact on the PWS. If the PWS is being impacted or has the potential to be impacted, stop those activities and seek specialist advice.

2.3 Unidentified Water Supplies

2.3.1 It is possible that previously unidentified PWS may be found during works.

2.3.2 If this happens, stop work in that location and seek specialist advice.

2.3.3 Necessary protection measures will need to be identified in consultation with the PWS owner, landowner, specialists and relevant authorities and implemented before work should resume in that location.

3 Revision History

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01	New document created	N/A	1.00	Richard Baldwin
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Scottish & Southern Electricity Networks

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Environmental

General Environmental Management Plan (GEMP)

- Forestry

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Delivery

Contents

1 Introduction

1.1 Forestry and woodland is an important resource in Scotland. It can contribute biodiversity, climate resilience, flood regulation as well as be an important product for materials. Overall there is a large societal importance on healthy, sustainable forestry management and works to tree's needs to be carefully considered to impact is minimised and the appropriate management regime is put in place. This GEMP is to be followed by anyone working undertaking forestry works, other tree felling or arboreal works on behalf of Scottish and Southern Electricity Networks (SSEN).

2 Legislation

2.1 All felling works must be authorised under an appropriate Planning Permission, Section 37 consent, Felling Licence, or permitted under The Forestry (Exemptions) (Scotland) Regulations 2019. The requirements of any consent must be adhered to at all times.

2.2 Landowner agreement must be in place prior to felling or other tree works taking place.

3 General Compliance Requirements

3.1 Felling/Tree Removal

3.1.1 No tree felling/vegetation removal should take place during the bird breeding season unless pre-felling surveys have been undertaken.

3.1.2 Mulching should only be used where there is a need to clear the site of tree residue or where trees or areas are too small to fell commercially (typically, a minimum top diameter of 7 cm will be commercially recovered). The resultant mulch is to be partially incorporated with the vegetation layer, or separated and made available for alternative reuse, preferably within the project.

3.2 Other Tree Works

3.2.1 Avoid all recognised injurious practices such as:

- Topping or lopping to an arbitrary height or branch length;
- Flush cuts;
- Unbalancing a tree crown by excessive one-sided pruning;
- Inappropriate use of flailing; and
- Climbing damage - Care shall be taken to avoid injuring thin and weak barked species by inappropriate use of rope access techniques on trees (such as use of climbing irons) on trees to be retained.

3.2.2 Vegetation should be left well balanced with natural crown shapes.

3.2.3 If the only pruning option is to severely reduce or unbalance a tree, then coppicing, or felling and replacement planting are often better options and shall be agreed with the landowner.

3.2.4 Pruning must also take into account the vegetation re-growth expected in the interval between cuts. This will vary widely between plant species and sites.

3.3 Protection of Retained Trees

3.3.1 Avoid damaging those standing trees which are to be retained.

3.3.2 A root protection zone should be identified and enforced around all trees to remain on site that are within close proximity to the works area to ensure that no accidental damage is caused to the tree roots. Root protection zones should be defined in line with the British Standard 5837.

3.3.3 No material arising from site works are to be stored within the root protection zone or stacked against trees.

3.4 Access

3.4.1 Utilise brash to assist with the access requirements for felling and construction machinery and give consideration to rights of way by transient wildlife. In agreement environmental specialists and landowners, small piles of brash and timber may be left on site at specific, identified locations in the interest of habitat creation and increasing biodiversity.

3.4.2 Access damage - Vehicle access and treatment of arisings shall avoid injury to low branches, stems, root buttresses and feeder roots. Branches should be removed by saw prior to access being taken. Breaking of limbs is not acceptable during access.

3.5 Storage of Marketable Timber

3.5.1 Presentation of produce should be in neat, safely stacked piles ready for forwarder/tractor pick-up, where required. Timber stacks must be not higher than 3m.

3.5.2 Sites shall be left tidy, with brash and stumps cut low and neatly with any hinge or jagged spikes removed, to prevent them becoming a trip hazard or an obstacle to vehicles. Remove all litter from site.

3.6 Forestry Waste

3.6.1 Note that forest wastes are controlled under SEPA Waste Regulations which must be adhered to.

3.7 General Forestry Practice

3.7.1 Forestry best practice as specified by Scottish Forestry and Forest Industry Safety Accord (FISA) is to be implemented at all times. The following is provided as a guide (but not a definitive list) to the standards that should be followed during forestry works:

- BS 5837 (2012) – Trees in Relation to Design, Demolition and Construction; and
- The Forestry Commission publication 'Managing Forest Operations to Protect the Water Environment'.

3.7.2 Spreading Disease - Appropriate regard shall be given to avoiding spreading fungal diseases. Forestry Commission Biosecurity Guidance should be followed. Consideration should be given to landowners' requirements for treating stumps.

3.7.3 Leave watercourses, culverts and ditches undamaged and clear of arisings. No felling into watercourses is allowed.

3.7.4 Local drainage systems to be maintained and not damaged or interrupted by the felling works.

3.7.5 No fires should be lit on site. Fire risk in and near wooded areas should be considered and risk assessed with additional mitigations imposed during prolonged dry periods (e.g. implementation of wider non-smoking zones.)

4 Revision History

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Scottish & Southern Electricity Networks

TG-NET-ENV-520

Environmental

General Environmental Management Plan (GEMP)

- Dust Management

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Delivery

Contents

1 Introduction

1.1 There are many potential sources of dust from a construction site which need to be closely managed on an ongoing basis to ensure it is adequately controlled on site. Likely sources of dust include:

- Haul roads and access tracks;
- Yards and storage areas;
- Soil storage areas;
- Construction corridor (exposed areas following stripping);
- Material transportation;
- Transport of mud onto the public highway;
- Loading and unloading materials;
- Quarrying or blasting activities;
- Crushing / screening activities;
- Stone breaking;
- Concrete or stone cutting.

1.2 Once dust particles are airborne, it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming airborne.

2 Legislation

2.1 In the event of dust becoming an issue there is potential for enforcement action from the Scottish Environment Protection Agency (SEPA) or the local authority. There is also the potential for legal action, which will have cost, programme and reputation implications.

2.2 Likely actions and implications include:

- Health and & Safety implications for operatives on site and wider public;
- Nuisance to neighbours and bad publicity for the site;
- Abatement notice or enforcement action from regulators;
- Impact on project programme and budget (e.g. compliance with statutory notices relating to dust levels / abatement notices);
- Under the Clean Air Act 1993 and Part 3 of the Environmental Protection Act 1990, local authorities can impose limits on dust generated from a site;
- Impacts on ecology (e.g. impacting on plant growth, smothering of habitats, watercourse pollution, local pH changes etc);
- Claims from farmers for dust damage to crops.

3 General Compliance Requirements

3.1 Planning the Works

3.1.1 Where Dust has the potential to become an issue, a protection plan should be developed.

3.1.2 Likely sources of dust should be identified ahead of works and appropriate mitigation measures put in place to minimise the risk of dust become an issue.

3.1.3 Nearby potential receptors such as residential dwellings or sensitive habitats should be identified, and the works planned minimise the risk of dust impacting on these, with the adoption of up-front appropriate mitigation measures.

3.1.4 Contingency measures should be put in place to enable a prompt, efficient and legally compliant response in the event of dust becoming an issue.

3.2 Avoiding Dust Generating Activities

3.2.1 Plan activities to ensure that, as far as practical, particularly dusty activities are not carried out in unsuitable weather conditions (i.e. very dry / windy conditions) unless suppression is in place.

3.2.2 Store materials away from the site boundary.

3.2.3 Limit vehicle speeds along stone access tracks.

3.2.4 Vehicles carrying bulk materials should be sheeted if could give rise to dust.

3.2.5 Keep height of soil stockpiles to a minimum and gently grade the side slopes.

3.2.6 Minimise the height of fall of materials.

3.2.7 Reduce the height that materials are unloaded from.

3.2.8 Mud should not be deposited on roads. Where applicable, wheel cleaning facilities will be provided prior to vehicles leaving site.

3.2.9 Keep all public roads well swept and bowse if required. Ensure a road sweeper can be commissioned locally to the site in the event of an issue arising.

3.2.10 Do not use drills that are powered by compressed air unless appropriate control measures are in place.

3.2.11 Ensure any tools or plant which have facilities for dust suppression utilise this function.

3.3 Management and Mitigation

3.3.1 Inspect high risk areas daily, especially during dry weather.

- Suppress dust from soil stockpiles, haul roads, stripped working corridors and material storage areas, by bowsing with water, where required;
- Ensure the relevant permissions and consents have been obtained for water used for suppression activities (e.g. CAR authorisation from SEPA or Standpipe licence from Scottish Water);

- Ensure efficient use of water to dampen down dust (e.g. use of diffusers to suppress wide areas with a spray/mist rather than a standard hosepipe arrangement);
- Any run-off from dust suppression activities shall be controlled in line with best practice to avoid creating sediment contaminated run off;
- Communicate dust management procedures to all relevant personnel and provide suitable training if required;
- Follow-up any complaints immediately and take action to avoid a repeat complaint.

3.3.2 Further information available in:

- BRE (2003) Control of dust from construction and demolition activities;
- DETR (2000) Environmental handbook for building and civil engineering projects;
- CIRIA (2005) Environmental Good Practice – site guide.

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Scottish & Southern Electricity Networks

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Environmental

General Environmental Management Plan (GEMP)

- Biosecurity (On Land)

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Environment

Contents

1 References

The documents detailed in Table 1.1 – Scottish and Southern Electricity Networks Documents below, should be used in conjunction with this document.

Reference	Title
PR-NET-OPS-025	Foot and Mouth Disease

2 GEMP – Biosecurity (On Land)

2.1 General principles of Soil Management Process

2.1.1 Biosecurity is important when any agricultural land, hill ground and moorland that carries stock, farm steadings, forestry and woodland, rivers and lochs and aquaculture units is entered where there is a risk of spreading pest or disease.

2.1.2 Biosecurity good practice will minimise the risk of contamination and the spread of animal and plant diseases, parasites and non-native species. You cannot always see disease causing agents, plant pests, parasites and non-native species and they can be picked up and carried on clothing, footwear, on vehicles and equipment to other locations.

2.1.3 The main risk identified for our work has been identified as the transfer of potato cyst nematode and clubroot (a brassica disease) in arable land. These are predominately spread by contaminated soil, plant matter or dung.

2.1.4 There is also the risk of spreading insect pests, or bacterial, viral and fungal tree pathogens in woodland areas, or causing the spread of non-native invasive species or injurious weeds.

2.1.5 Additionally, there are several diseases capable of being transmitted from animals to humans including Lyme Disease, Leptospirosis, E. coli O157 and Salmonella. Good hygiene practice will significantly reduce the risk of contracting or spreading a disease.

2.2 Biosecurity Control Stages

2.2.1 The stage of biosecurity control that should be practiced will vary according to:

- Type of work you are carrying out
- Use of land you are entering e.g. is it used to grow crops such as brassicas or potatoes
- Livestock movement, some sites are governed by stricter disease control measures
- Landowner / occupier as well as project specific requirements
- The known presence of current pests and diseases or restrictions applied to land or premises

2.2.2 The stages (Stage 1 and Stage 2) described below are based on Scottish Government guidelines but have been tailored to the type of works normally undertaken by us or our contractors.

2.2.3 Unless there is a specific risk or requirement Stage 1 should suffice (see below). The control measures are only the minimum recommended and you must comply with any biosecurity procedures put in place by the contractor or landowner.

2.3 Biosecurity Control – Stage 1

2.3.1 For non-intrusive works e.g. site visits, walkover surveys and intrusive works in low risk areas i.e. where there is no know reasonable risk of the transmission of disease or pests.

- Ensure the landowner has been notified and is aware of the works/surveys to be undertaken
- Ensure all personnel have been briefed and understand what is required of them and the possible consequences of not adhering to the measures explained
- Ensure footwear is clean (visually free from soil and debris) before entering site. If necessary, brush and wash with water
- Ensure vehicles, plant and tools (including temporary access materials such as 'bog mats' and track way panels) to be used on the site is cleaned at the commencement of the works and thereafter is kept clean and, in particular, remove any accumulated mud, especially when moving between holdings
- Make use of any facilities provided at the premises to clean footwear if required by the contractor or land manager
- Keep access to a minimum, do not access areas unnecessarily and if practical do not take vehicles onto premises and keep to established tracks
- Respect any notices or instructions
- Food, Litter and packaging must be removed from site to prevent animals from eating or getting tangled up in material, litter etc
- Ensure that gates are left as they are found, as per the Scottish Government's Biosecurity Code. For more information on specific diseases refer to Scottish Government web pages

2.3.2 The minimum equipment to be carried in the vehicle should include a stiff brush, water sprayer with sufficient water to clean equipment and footwear/clothing, a hoof pick to remove mud between boot treads and suitable container.

2.4 Biosecurity Control – Stage 2

2.4.1 Ensure landowner has been contacted well in advance of any works taking place. Establish whether there are any control measures needed which relate specifically to the area you are working. For intrusive works i.e. ground-breaking operations in areas which have been deemed to be high risk. Also, for all non-intrusive work e.g. site walkovers where there are specific landowner or project requirements for this level of biosecurity non-intrusive works e.g. site visits, walkover surveys and intrusive works in low risk areas i.e. where there is no know reasonable risk of the transmission of disease or pests.

2.4.2 High risk areas are those fields which have been either identified as having the potential to be used to grow brassicas (oil seed rape, cabbage, turnips, swede, etc) or potatoes, or any other areas deemed to be high risk by the contractor.

- Mitigations as per Stage 1
- Clean and disinfect footwear using appropriate disinfectants (please refer to Farmland Biosecurity Policy for further guidance)
- Ensure vehicles, plant and tools (including temporary access materials such as 'bog mats' and track way panels) are adequately cleaned and disinfected using appropriate methods. Pay particular attention to the tyres and wheel arches. This is doubly important when moving from one farm to another to reduce the risk of spreading disease

2.4.3 If the stages 1 and 2 are not anticipated to be sufficient e.g. there is a known outbreak of a contagious pest or disease, please refer to PR-NET-OPS-025 Foot and Mouth Disease, and SEARS guidance for enhanced biosecurity control.

2.4.4 Further guidance can be obtained from the SEARS website and latest advice on the type of disinfectant to used can be obtained from the Department for Environment, Food and Rural Affairs (DEFRA) website: http://disinfectants.defra.gov.uk/

3 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New document created	N/A	1.00	Richard Baldwin
02				

Scottish & Southern Electricity Networks

TG-NET-ENV-522

Environmental

General Environmental Management Plan (GEMP)

- Restoration

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Delivery

Contents

1 Introduction

1.1 The way in which stripping, storage and replacement of soils / turfs is undertaken can significantly increase the successfulness of any reinstatement. The following guidance should form a basis of the restoration plan for the project.

1.2 Important guidance on soil management principles is contained in the Soil Removal, Storage and Reinstatement General Environmental Management Plan (GEMP) and should be followed in conjunction with this GEMP.

2 Legislation

2.1 Reinstatement and restoration obligations will be imposed on the works through the core consenting regimes, including:

- Planning permission under the Town and Country Planning (Scotland) Act 1997 (as amended);
- S37 consent under the Electricity Act 1998 (as amended);
- SSSI consent under Nature Conservation (Scotland) Act 2004 (as amended);
- Natura Consent under Conservation (Natural Habitats, &c.) Regulations 1994 (as amended); and
- CAR authorisations under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended).

2.2 Any obligations imposed under these consents must be complied with.

3 General Compliance requirements

3.1 Planning Construction Works

3.1.1 In planning construction works seek to avoid intrusive work wherever possible. There will be less reinstatement and restoration required once construction is finished.

3.1.2 Seek to:

- Avoid major earthworks wherever possible;
- Retain natural features such as rocky outcrops;
- Avoid loss of mature trees; for example, remove young regenerating birch in preference to mature trees which may have biodiversity and landscape value and will give structure to the finished works;
- Site tracks and micro-site route around groups of trees to leave natural features rather than dissecting groups/copses;
- When crossing hedges or walls plan to use existing gaps;

- Design any permanent drainage ditches to be as natural as possible (sinuous with varied banks and alignments etc);
- Design drainage measures carefully to avoid unnecessary long-term effects on adjacent habitats which could be difficult to restore; and
- Plan all site activities to reduce the need for vehicle movements. This will help in final restoration by minimising compression etc.

3.2 Planning Restoration

3.2.1 Restoration at the end of the works will always be more successful if planned in advance. A soil management and restoration plan should be developed in advance of the works.

3.2.2 Always:

- Plan restoration in advance of working on-site - this will save time and money at a later stage and will ensure that opportunities are not lost, and a more successful outcome is achieved;
- Ensure that detailed restoration plans take account of specific habitat types and locations;
- Identify where soils and peat and turfs will be stored;
- Take account of all agreements made during consenting process and with landowners;
- Take account of all environmental interests, for example, seek to enhance local biodiversity (avoiding planting on sensitive archaeological or geological sites);
- Plan how monitoring of restoration will be undertaken identifying when, how frequently and by whom;
- Consider how deer pressures (grazing and wallowing) or other grazing may affect the success of planting and plan restoration works accordingly; and
- Plan restoration taking account of run-off erosion risks on steep slopes in poor conditions; be aware of the potential for sediment rich run-off to smother sensitive or newly established vegetation in poor weather conditions and seek to minimise this.

3.3 Early Works

3.3.1 Early works will help in achieving more successful final restoration. These include the following:

- Always take photographs of the site before works start to guide later restoration including of any drainage that will be disturbed;
- Strip turfs and vegetation carefully and use in temporary works to prevent erosion;
- Turfs can be stored successfully in temporary cut-off ditches in some locations which can aid attenuation and prevent turfs / vegetation from drying out;
- Store top soil and subsoil separately according to best practice;

- Store stripped materials in the immediate vicinity (or as close as feasible) for future Re-use in site restoration;
- Keep a record of where all soils and turfs are stored. Consider signage on storage areas to help identifying source and type of material storage when it comes to reinstatement;
- Remove large boulders (rather than cover) to replace in restoration works;
- Remove noxious weeds in accordance with best practice and legal requirements. Do not allow unnecessary spread or this will compromise the success of final restoration works;
- Seek to avoid compression of soils as much as possible on restoration. Drainage may be impeded and may result in extensive rush areas being created; and
- During construction seek to avoid creating eroded areas which can be difficult to restore successfully.

3.4 Final Restoration

3.4.1 At the end of construction in any area the land and vegetation must be restored to pre-construction conditions. This should be done carefully and sympathetically taking account of all required mitigation and of the conditions. The following principles should also be adopted where appropriate:

- Undertake restoration works in suitable weather conditions - wet ground conditions can be difficult as can hot dry and windy spells;
- Restoration should ensure the successful integration of the site with surrounding land uses and habitats;
- All field, roadside or other boundaries disturbed during construction operations would be reinstated using the original materials (in the case of stone dykes, this having been carefully set aside for re-use) or to the original specification and to at least the pre-existing condition, or better;
- Natural regeneration of habitats should be promoted in all appropriate areas;
- Where hedgerow field boundaries are removed, they are to be replanted with the same species and at the same spacing intervals;
- Any required replanting and / or reseeding should be undertaken at appropriate times of the year and with the agreement of landowners / occupiers (and SNH if within designated sites);
- Identify the most appropriate machinery to use for restoration in any area (small digger or large machine etc) according to the sensitivity of the habitats and the extent of areas to be restored (take advice from the site ecologist);
- Undertake small sections of the site for restoration and monitor success with input from the site environmental representative(s) before restoring large areas;
- All accesses are to be restored to original condition.

- A pro-active approach to restoration i.e. use of temporary access materials such as Trackway panels and appropriate low pressure construction vehicles, particularly in areas of wet ground, is encouraged.
- Unless otherwise specified all decommissioned tower foundations are to be removed to 1.5 m below ground level.

4 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New document created	N/A	1.00	Richard Baldwin
02				

Scottish & Southern Electricity Networks

TG-NET-ENV-523

Environmental

General Environmental Management Plan (GEMP)

- Bad Weather

	Name	Title
Author	Dan Thomas	Environmental Project Manager
Checked by	Simon Hall	Environmental Project Manager
Approved by	Richard Baldwin	Head of Delivery

Contents

1 Introduction

1.1 It is important to consider the implications of poor weather conditions and associated environmental risks.

1.2 Bad weather, particularly heavy rain, can increase the risk of significant environmental impacts during construction (for example, on sensitive habitats and increased risk of sediment laden run-off into surface waters).

1.3 Storm events can also impact oil storage areas and increase the risk of a loss of oil to the environment.

2 General Compliance Requirements

2.1 General

2.1.1 Identify an action plan before construction starts that identifies measures to implement in times of extreme weather. This should include heavy rain, high winds, heavy snow, prolonged freezing condition and periods of dry weather.

2.1.2 The weather forecast should be checked daily and changes to work activities or mitigation requirements implemented on an ongoing basis.

2.1.3 Identify and communicate any areas of flood risk. SEPA flood mapping can assist in this but should not be the sole information used in any risk assessment.

2.1.4 Ground conditions should be checked regularly, and assessment made as to whether they are suitable for the proposed site activities.

2.1.5 Check whether plant is causing damage on site because of poor ground conditions exacerbated by bad weather.

2.1.6 Plan for high run-off in advance and Identify protection measures (silt traps, straw bales and booms etc.).

2.1.7 Check for any materials stored close to watercourses during construction activities which could be washed into the water in times of storm.

2.1.8 During times of excessive rainfall and ground saturation, stripping and reinstatement works should not be undertaken.

2.1.9 Check any containment bunds (oil storage, concrete washout etc) have the appropriate capacity and empty if necessary, to prevent any un-controlled discharge.

2.1.10 Ensure all skips and waste containers are covered / closed to minimise water ingress.

2.1.11 Emergency response plans should take account of bad weather.

2.1.12 Consider the use of a visual display board which can be used to alert site staff to the expected weather and the necessary preparations that are required.

3 Revision History

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01	New document created	N/A	1.00	Richard Baldwin
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