

**ELECTRICITY ACT 1989  
TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997  
DPEA CODE OF PRACTICE FOR ELECTRICITY ACT INQUIRIES**

**TEALING TO KINTORE UPGRADE PROJECT (TKUP) TRL-120-1**

**MAJOR ACCIDENT HAZARDS**

**Public Inquiry Written Submission by Brian Wade**

The case for a PLI hearing regarding major accident hazard on SSEN TKUP (Case TRL-120-1).

Informative reference:

Aligned groups Single Objection Document

<https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00005225&T=4>  
Representation No. 969. (see Section 8 and Appendix 3)

This document describes in depth the mechanisms of induced voltage corrosion and the issues of corrosion and mechanical damage to the pipelines associated with the proposals and the change in the safety case caused by the introduction of an ignition source.

Normative references:

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017  
<https://www.legislation.gov.uk/ssi/2017/101/contents>

The Health and Safety at Work etc Act 1974  
<https://www.legislation.gov.uk/ukpga/1974/37/contents>

National Planning Framework 4  
<https://www.gov.scot/publications/national-planning-framework-4/>

**1. Failure to Comply with the EIA Regulations:**

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, Regulation 4(4) and Schedule 4 (8) require the assessment of “**expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters.**” (emphasis added)

Regulation 4 (2) specifies:

*The environmental impact assessment must identify, describe and assess in an appropriate manner, in light of the circumstances relating to the proposed development, the direct and indirect significant effects of the proposed development (including, where the proposed development will have operational effects, such operational effects) on the factors specified in paragraph (3) and the interaction between those factors.*

(3) *The factors are—*

(a) *population and **human health***; (emphasis added)

The proposed OHL would introduce a risk of a major accident when crossing / close to high pressure gas pipelines, with the ensuing major accident likely to damage or destroy the OHL/Pylons in the vicinity. However, 'Major Accidents and Disasters' and 'Population and Human Health' have been, inexplicably and irrationally, scoped out of the TKUP EIA, meaning that both the planning authority and Scottish Ministers are not in possession of all relevant information required for a lawful determination. This topic is also addressed in Planning Circular 1/2017. Dr Iain Stirling has addressed aspects of Public Health.

Regulation 19 requests were submitted to the ECU requesting that 'Major Accidents and Disasters' and 'Population and Human Health' be scoped into the EIA, but these requests were, without explanation, not acted upon by the ECU, nor subsequently by the Reporters.

## **2. The Health and Safety Executive:**

As the Competent Authority, under the Control of Major Hazard Regulations, 2015, the Health and Safety Executive has statutory responsibility to provide regulatory oversight of high-hazard industries using or storage of quantities of dangerous substances that fall into the scope of the Regulations. The proposed route submitted by SSEN for the TKUP project places pylons and overhead conductors in very close proximity to high pressure gas pipelines, defined as "Major Accident Hazard Pipelines" under the Pipeline Safety Regulations 1996.

In the event of an accident, having large quantities of flammable, environmentally hazardous or toxic substances on site increases the potential to inflict multiple injuries or fatalities to those working on site or living in the local community and/or cause damage to the environment. The HSE aims to assure the public that onshore major hazard businesses are meeting their responsibilities to control major accidents to people and the environment and to mitigate the consequences in the event of an industrial accident.

Under current legislation decision-makers are required to consult HSE on certain planning proposals around major hazard establishments and major hazard pipelines and to consider HSE's representations when determining associated applications.

HSE Land Use Planning Support Team have made the following representation to ECU:

*3. The proposed development red line site boundary may cross a large number of major accident hazard pipelines. **There is potential to initiate a major accident at the major accident hazard pipelines**, for example during the development construction phase and*

*potentially the operational phase, because the development area intersects the route of the major accident hazard pipeline.*

***HSE suggests that the EIA should show that if the red line site boundary crosses any major accident hazard pipelines that the operator of the pipelines have been consulted regarding the following issues or that these issues have been considered in the assessment:***

- *the development restricted area due to the pipeline*
- *ensuring the integrity of the pipeline and protecting the pipeline from development and operational works. (emphasis added)*

*HSE's advice on the granting of planning permission for relevant development in zones set by HSE considers the issue of such accidents in the vicinity affecting people at the proposed development. That HSE advice can be obtained by the planning authority by using HSE's Land Use Planning Advice web app <https://pa.hsl.gov.uk/>.*

HSE Pipelines Division were not, however, included in the list of organisations consulted in the EIA scoping process.

### **3. United Kingdom Onshore Pipeline Operators Association**

UKOPA provides the recognised and authoritative view of UK Pipeline Operators on strategic issues relating to safety management, operations and integrity management of pipelines. It seeks to effectively influence the development and implementation of pipeline-related legislation and standards for the mutual benefit of all stakeholders and promote best practice in the pipeline industry.

UKOPA publish industry guidelines including Pipeline Hazard Distances, AC Corrosion Guidelines, Local Authority Planners information regarding On Shore Pipelines and Associated Installations.

UKOPA were not, however, included in the list of organisations consulted in the scoping process.

### **4. National Gas Transmission**

National Gas Transmission (NGT) operate the five high pressure gas pipelines, originating from the St. Fergus terminal, which pass through the Aberdeenshire/Angus corridor.

NGT are responsible for maintaining the safety management system for the pipelines, all of which are still in operation. When the pipelines were installed in the 1970s, the safety case assumed that there would be no risk of AC induction corrosion and in the event of accidental release of natural gas there would be no potential ignition source at a height of where the gas cloud would have a gas/air ratio which is capable of ignition.

Under Regulation 23 of The Pipelines Safety Regulations 1996

***(1) The operator shall, before the design of a major accident hazard pipeline is completed prepare, and thereafter revise or replace as often as may be appropriate, a document***

relating to the pipeline containing, subject to paragraph (2), sufficient particulars to demonstrate that—

- (a) **all hazards relating to the pipeline with the potential to cause a major accident have been identified;**
- (b) **the risks arising from those hazards have been evaluated;**
- (c) **the safety management system is adequate;** and
- (d) he has established adequate arrangements for audit and for the making of reports thereof. (emphasis added)

NGT were not, however, included in the list of organisations consulted in the EIA scoping process.

## 5. Institution of Gas Engineers and Managers

IGEM acts as a focal point for formulating and standardising codes of practice and technical standards for industry, to provide a neutral forum for the exchange of technical and managerial information, to ensure that the professional standards of individual gas engineers and those associated with the gas industry are maintained, and to encourage good practice through exchange of information. The IGEM industry standard *IGEM/SR/18 Edition 3 - Safe working practices to ensure the integrity of gas pipelines and associated installations* was used as the basis of National Gas Transmission document: *T/SP/SSW/22 Specification for safe working in the vicinity of National Gas Transmission high pressure gas pipelines and associated installations - requirements for third parties*.

IGEM were not, however, included in the list of organisations consulted in the EIA scoping process.

## 6. Scoping Report

In their application/EIA Scoping Report, SSEN say “15.2.2 *Whilst the Proposed Route is predominantly rural in nature, it crosses a number of existing gas pipelines, runs in proximity to the A90 trunk road in several locations (Sections B, D and E) and runs close to a number of existing OHLs (see Chapter 4: Land Use and Recreation). There are also a number of operational wind farms located adjacent to the Proposed Route, including Meikle Carewe northwest of Stonehaven in Section E.*” (emphasis added)

They do not however mention that the proposed route crosses high pressure gas pipelines at an acute angle and also runs parallel to, and in close proximity to, gas pipelines in several locations. This is a significant risk profile as highlighted in the following codes and standards:-

- ISO Standard ISO 18086:2019 <https://www.iso.org/standard/78148.html>

*Long-term AC interference on a buried pipeline can cause corrosion due to an exchange of AC current between the exposed metal of the pipeline and the surrounding electrolyte.*

*This exchange of current depends on an AC voltage of which the amplitude is related to various parameters such as the following:*

- configuration of AC power line phase conductors;
  - presence and configuration of the earthing conductor;
  - distance between the AC power line/traction system and the pipeline;
  - current flowing in the AC power line/traction system phase conductors;
  - average coating resistance of the pipeline;
  - thickness of the coating;
  - soil resistivity;
  - presence of earthing systems;
  - voltage of the AC railway system or the AC power line system.
- NACE International Standard Practice (SP21424-2018)  
<https://www.globalspec.com/product/detail?productId=1b872318-dd3e-445c-b471-21c3e928698e&comp=5943>  
*7.5 Mitigation of AC Corrosion through Construction Design: Especially during the engineering design of new pipelines or new AC high voltage power lines, the possibilities of reducing the induced AC voltage should be considered whenever practical.*
  - **NEW UK PIPELINE RISK ASSESSMENT CODES – IGEM TD/2 AND PD 8010 PART 3 (UKOPA-09-0060)** <https://pdf4pro.com/view/new-uk-pipeline-risk-assessment-codes-216f5c.html>  
*Major hazard cross country pipelines are laid in 3rd party land with an operational life typically greater than 50 years. During this time, the land adjacent to a pipeline is subject to change, and developments are likely to occur near the pipeline route. This often means there is an increase in residential or working population near the pipeline, and as a result, the pipeline may become non-compliant with code requirements which originally routed the pipeline safely away from populated areas. **To address this situation, land use planning is applied so that the safety of, and risk to developments in the vicinity of major hazard pipelines are assessed at the planning stage.***

*The Health & Safety Executive (HSE) are the statutory consultees in this process, and they set risk-based consultation zones around such pipelines, **within which the risks to people and developments must be assessed and taken into account when planning authorities consider new planning applications.** For most cases, standard decision tables are applied by the planning authority from the HSE document PADHI (Planning Advice for Developments near Hazardous Installations), but for borderline or difficult cases, site specific quantified risk assessments (QRAs) are applied to obtain risk levels, and to assess possible mitigation measures to reduce risks” (emphasis added)*

The risk of AC induced corrosion of cathodically protected gas pipelines is not mentioned in the scoping report at all. However, the scoping report was accepted by the ECU in their scoping Opinion.

The risk of mechanical damage to high pressure gas pipelines during the construction and commissioning of pylons and overhead lines is also not adequately addressed in the scoping report or the EIA Report.

The applicants, very insensitively, say in their scoping report “15.2.4 *It is assessed that, in its current condition, the area within the Proposed Route is no more vulnerable to major accidents and disasters than the surrounding areas, and **the area is not known to have a history of such events.***”

This statement totally ignores the 2020 Carmont fatal train derailment which occurred very close to the proposed route. The SSEN statement is highly disrespectful to those involved, not least the families of the three deceased persons.

<https://www.gov.uk/government/news/report-022022-derailment-of-a-passenger-train-at-carmont>

The applicant has attempted to manipulate the scoping process by removing topics from the EIA scope that are considered difficult and which create uncertainties that require thorough investigation. Respectfully, surely the question must be asked by the Reporters, should public health and safety not be treated as a priority material consideration in the planning system?

#### **7. National Gas Transmission correspondence.**

Correspondence from National Gas Transmission dated 10<sup>th</sup> March, 2026 says “*An AC interference model has not yet been commissioned by SSEN, that would give NGT a better indication of where AC interference may be in breach of acceptable limits, and allow us to explore the potential mitigation options if required.*”

NGT, who were consultees for the Hurlie Substation application, have lodged a ‘High Risk Response Letter’ to the proposed substation, which is part of the TKUP project. NGT have also issued a conditional No Objection to the Hurlie application. The conditions specified are:-

*National Gas Transmission will not object to the installation provided the following conditions are applied:*

*The development shall not be energised until an Asset Protection Plan covering the electrical impact assessment has been carried out and approved in writing by the Local Planning Authority, in consultation with National Gas Transmission (NGT).*

*The Electrical Impact Assessment shall include, but not be limited to:*

- 1. Details of the proposed installation, proposed earthing system, cable routing and configuration.*
- 2. A detailed analysis of electrical impact on the existing NGT infrastructure, under both normal and fault conditions, taking into account soil resistivity surround the pipeline, and where appropriate AC harmonics and filtering.*
- 3. Calculations to demonstrate the separation distances for cables and earthing system will not cause unacceptable levels of AC/DC interference to NGT infrastructure.*
- 4. Electrical risk assessment which confirms the touch and step potentials under normal and fault conditions remain within acceptable limits.*
- 5. Mitigation measures where necessary to address any unacceptable identified impacts. This may include installation of additional monitoring equipment or redesign of the earthing arrangement of the installation.*

6. Confirmation from NGT the assessment is satisfactory and complies with all relevant standards and specifications, and that any required mitigation has been agreed. The development shall thereafter be carried out in full accordance with the approved plan and any protection measures shall be installed and maintained as agreed with NGT, which may be throughout the lifecycle of installation.



Our Ref: 37576885 National Gas-APP/2024/1951

Tuesday, 10 June 2025

Jordane Maples  
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**National Gas Emergency Number:  
0800 111 999\***

\*Available 24 hours, 7 days/week.  
Calls may be recorded and monitored.  
[www.nationalgas.com](http://www.nationalgas.com)

Asset Protection  
National Gas Transmission  
National Grid House  
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CV34 6DA  
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#### **National Gas Transmission – High Risk Response Letter**

Dear Sir/ Madam,

An assessment has been carried out with respect to National Gas Transmission plc's apparatus and the proposed work location. Based on the location entered into the system for assessment the area has been found to be within the High Risk zone from National Gas Transmission plc's apparatus and you **MUST NOT PROCEED** without further assessment from Asset Protection.

Before you go ahead with these works, you are required to send your plans and a description for us to review them at [box.assetprotection@nationalgas.com](mailto:box.assetprotection@nationalgas.com). We will contact you within 28 days of receipt.

It is **YOUR** responsibility to take into account whether you are required to or would benefit from referring to the HSE Land Use Planning App (LUP), available from HSE's website. (Please note for some works this is a requirement for them to take place) More information on the LUP is available at <https://www.hse.gov.uk/landuseplanning/>

Please note this response and any attached map(s) are valid for 28 days.

Yours sincerely

**Asset Protection Team**

As a result of the recent *Raeshaw Farms* opinion, it would be logical to assume that, as the only source of alternating voltage power to the substation would be from the overhead lines, the two components (Hurlie substation and the OHL) must be considered as a single project. There must be an evaluation of that question. It has to be assumed that if NGT had been consulted as part of this application, they would have similarly issued a 'High Risk Response'.

## 8. Legislation and National Policy.

### The Construction (Design and Management) Regulations 2015

Under the CDM Regulations “ *Designers must: eliminate foreseeable health and safety risks to anyone affected by the project (if possible) take steps to reduce or control any risks that cannot be eliminated.*”

If no modelling has been performed, it is not possible to quantify the risk of AC induced corrosion, the mitigations that may be required or whether the mitigations and residual risk are acceptable to the Ministers.

### The Health and Safety at Work etc Act 1974

The Act requires an employer to ‘*conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety*’.

SSEN, as the operators of the proposed overhead line and substations, and employing staff to maintain and operate the infrastructure, therefore have a responsibility to establish and eliminate risks to the health and safety of the general public. This requirement is emphasised in:-

### The Management of Health and Safety at Work Regulations 1992

3.—(1) *Every employer shall make a suitable and sufficient assessment of—*

*(a) the risks to the health and safety of his employees to which they are exposed whilst they are at work; and*

***(b) the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking, (emphasis added)***

### Gas Safety (Management) Regulations 1996

*Duties on persons conveying gas*

3.—(1) *No person shall convey gas in a network unless—*

*(a) he has prepared a safety case containing the particulars specified in Schedule 1 and that safety case has been accepted by the Executive;*

*Revision of safety cases*

4.—(1) *A person who has prepared a safety case pursuant to these Regulations shall revise its contents whenever it is appropriate, but nothing in this paragraph shall require him to have the revision accepted by the Executive.*

***(2) Where a revision proposed to be made under paragraph (1) will render the safety case materially different from the last version accepted by the Executive pursuant to these Regulations, the revision shall not be made unless the Executive has accepted the revision, and for the purposes of this paragraph in determining whether a proposed revision will render the safety case materially different from the version referred to above, regard shall be had to the cumulative effect of that proposed revision and***

*any previous revisions made under paragraph (1) but not subject to this paragraph.*(emphasis added)

*(3) A person who has prepared a safety case which has been accepted by the Executive pursuant to these Regulations shall make a thorough review of its contents at least every three years.*

It is self-evident that the construction of a high voltage overhead line adjacent to and crossing a gas pipeline ‘will render the safety case materially different’. The operator of the pipeline and therefore the party responsible for maintaining the safety case should have been consulted in any planning application affecting that safety case. The applicants have failed to address the effects of their proposals on the safety case for the five Major Accident Hazard pipelines operated by National Gas Transmission, various distribution gas pipelines operated by Scottish Gas Networks or the hydrocarbon liquids pipeline operated by Ineos.

Department for Energy Security & Net Zero

National Policy Statement for Electricity Networks Infrastructure (EN-5)

*2.4.3 However, **the Secretary of State should bear in mind that electricity networks infrastructure must in the first instance be safe and secure**, and that the functional design constraints of safety and security may limit an applicant’s ability to influence the aesthetic appearance of that infrastructure.*

*2.4.4 While the above principles should govern the design of an electricity networks infrastructure application to the fullest possible extent – including in its avoidance and/or mitigation of potential adverse impacts (particularly those detailed in Sections 2.9 below) – **the functional performance of the infrastructure in respect of security of supply and public and occupational safety must not thereby be threatened.** (emphasis added)*

National Planning Framework 4

NPF4 National Spatial Strategy says: “More people need to be involved in planning their future places so that the built environment is **safe** and welcoming to everyone, including women, disabled people, children and young people and black and ethnic minority groups.”

NPF4 Policy 14 says:

*“c) Development proposals that are poorly designed, detrimental to the amenity of the surrounding area or inconsistent with the six qualities of successful places, will not be supported”.*

NPF4 Policy 23 says:

***“g) Development proposals within the vicinity of a major accident hazard site or major accident hazard pipeline (because of the presence of toxic, highly reactive, explosive or inflammable substances) will consider the associated risks and***

***potential impacts of the proposal and the major accident hazard site/pipeline of being located in proximity to one another.*** (emphasis added)

*h) Applications for hazardous substances consent will consider the likely potential impacts on surrounding populations and the environment.*

*i) **Any advice from Health and Safety Executive, the Office of Nuclear Regulation or the Scottish Environment Protection Agency that planning permission or hazardous substances consent should be refused, or conditions to be attached to a grant of consent, should not be overridden by the decision maker without the most careful consideration.***

### Electricity Act 1989

3C Health and safety.

(1) The Secretary of State and the Authority shall consult —

(a) the Health and Safety Executive about all electricity safety issues, and

(b) the Office for Nuclear Regulation about all electricity safety issues relating to nuclear sites (within the meaning of Part 3 of the Energy Act 2013),

which may be relevant to the carrying out of their respective functions under this Part.]

(2) The Secretary of State may require the Authority also to consult him about electricity safety issues of particular descriptions.

**(3) The Secretary of State and the Authority shall, in carrying out their respective functions under this Part, take into account any advice given by the Health and Safety Executive or the Office for Nuclear Regulation about any electricity safety issue (whether or not in response to consultation under subsection (1) (emphasis added)**

...

(5) For the purposes of this section an electricity safety issue is anything concerning the generation, **transmission**, distribution or supply of electricity **which may affect the health and safety of—**

**(a) members of the public;** or

(b) persons employed in connection with any of those activities. (emphasis added)

## **9. Summary and Conclusions**

The subjects of ‘Major Accidents and Disasters’ and ‘Population and Human Health’ are critical and mandatory requirements of an Environmental Impact Assessment Report as defined in Scottish planning legislation. Inexplicably, they have been scoped out of

Energy Consents Unit application ECU00005225. Multiple agencies, which would logically have been expected to be consulted, have been excluded from the process.

For the Scottish Ministers to grant consent to this application without consideration of these topics and without full knowledge of pertinent information, but while being aware that such information existed, would be in breach of the principle of the UK's planning system that the right development happens in the right place at the right time, benefitting communities and the economy.

The applicants in their application have failed to demonstrate that their proposal is compliant with the requirements of multiple different UK Acts and statutory instruments, as well as several industry standards and guidelines. These requirements are intended to protect the general public and the applicant's own employees from harm caused by avoidable risk. To consent a project which cannot demonstrate that risk to human health and property has been reduced to a level as low as reasonably practicable would be to endorse an unlawful development and operation.

The Construction (Design and Management) Regulations 2015 require the developer to eliminate, so far as is reasonably practicable, foreseeable risks to the health or safety of any person in the preconstruction phase, *which includes design of the project*. The applicants have designed their project and submitted it for approval without being able to evidence their compliance with CDM 2015.

Our submission is that the EIAR is incomplete in these respects, and that since these components are critical to a decision, the EIA process is unlawful.

Brian Wade

For NOTKUP

April 2026