

**Grid Code
Modification
Recommendation Form**



Title of Recommended Proposal:

Clarification to Grid-connected Transformer Neutral Earthing requirements

MPID 272

Date:	19/04/2018
Recommended at GCRP Meeting No.:	#1/2018 (31/01/2018)
Grid Code Version:	6
Grid Code Section(s) Impacted by Recommended Proposal:	CC.7.2.5.3.1 CC.7.2.5.3.2

The Reason for the Recommended Modification:

This modification is required to align EirGrid TSO requirements for Grid-Connected Transformer Neutral Earthing across 110 kV and 220 kV applications. Individual applicants will be advised via their Connection Offer as to their specific requirements which will serve to remove any ambiguity that may exist.

This is required for the management of single phase to ground short circuit levels at connection points and at surrounding network nodes.

For the avoidance of doubt this modification proposal only applies to generator and demand customer's transformers. This proposal does not apply to transformers located at the TSO-DSO boundary.

History of Progression through GCRPs, Working Group and/or Consultation:

On the 14 September 2017 this modification proposal was first presented to the Ireland GCRP members. At the meeting Tony Hearne (DSO) raised a concern that the proposed text does not explicitly capture that this requirement does not apply to Distribution connected transformers. The modification proposal was put on hold pending further discussion between the TSO and the DSO.

Following the Ireland GCRP meeting the TSO and DSO consulted on the text of the proposal and they agreed to a new version of the wording. On the 31 January 2018 an agreed revised version of MPID 272 was presented to the members of the Ireland GCRP members. No comments or objections were raised at this meeting and the panel members agreed to issue a modification recommendation to the CRU.

Summary Note of any Objections to the Recommended Change from GCRP Members or Consultation Responses:

At the Ireland GCRP meeting, 14 September 2017, the DSO raised a concern that the proposed text did not clearly capture that the requirement does not apply Distribution connected transformers.

Outcome of any GCRP Meeting Actions Relating to the Recommended Modification:

Following the Ireland GCRP meeting, 14 September 2017, the TSO and DSO engaged in discussions and agreed to a new version of the text that clearly states that this requirement does not apply to Distributed connected transformers. A revised version of the text was presented to the panel members at the Ireland GCRP Meeting, 31 January 2018.

Red-line Version of Impacted Grid Code Section(s) - show recommended changes to text:

Deleted text in ~~strike-through red font~~ and new text highlighted in *blue font*

CC.7.2.5.3.1 **Demand Customers and Generators** are advised that ~~P~~provision should be made for the earthing of the neutral of each of their **Transformers** connected to the 110 kV **System** by bringing out the neutral and ensuring that the insulation is such that these **Transformers** can be operated unearthed.

The **TSO** will consider on a case by case basis the required treatment of the 110kV neutral connection of these **Transformers**. A 110 kV neutral earth switch may be required to be installed in specific instances and **Demand Customers** or **Generators**, as applicable, will be advised of this at the time of the **Connection Offer**. The **TSO** will be responsible for the status of the 110 kV neutral earth switch on these **Transformers**. For the avoidance of doubt, this clause does not apply to **Transformers** located at the **TSO-DSO**, boundary where such issues are agreed between the **TSO** and **DSO**.

CC.7.2.5.3.2 **Demand Customers and Generators** are advised that ~~P~~provision should be made for the earthing of the neutral of each of their **Transformers** connected to the 220 kV **System** by bringing out the neutral and ensuring that the insulation is such that these **Transformers** can be operated unearthed. The **TSO** will consider on a case by case basis ~~if the Transformer is required to be operated with the 220kV neutral unearthed.~~ the required treatment of the 220kV neutral connection of these **Transformers**. A 220 kV neutral earth switch may be required to be installed in specific instances. ~~Applicants~~ and **Demand Customers** or **Generators**, as applicable, will be advised of this at the time of the **Connection Offer**. The **TSO** will be responsible for the status of the 220 kV neutral earth switch on these **Transformers**. For the avoidance of doubt, this clause does not apply to **Transformers** located at the **TSO-DSO** boundary, where such issues are

agreed between the **TSO** and **DSO**.

Green-line Version of Impacted Grid Code Section(s) - show recommended final text:

CC.7.2.5.3.1 **Demand Customers** and **Generators** are advised that provision should be made for the earthing of the neutral of each of their **Transformers** connected to the 110 kV **System** by bringing out the neutral and ensuring that the insulation is such that these **Transformers** can be operated unearthed.

The **TSO** will consider on a case by case basis the required treatment of the 110kV neutral connection of these **Transformers**. A 110 kV neutral earth switch may be required to be installed in specific instances and **Demand Customers** or **Generators**, as applicable, will be advised of this at the time of the **Connection Offer**. The **TSO** will be responsible for the status of the 110 kV neutral earth switch on these **Transformers**. For the avoidance of doubt, this clause does not apply to **Transformers** located at the **TSO-DSO** boundary, where such issues are agreed between the **TSO** and **DSO**.

CC.7.2.5.3.2 **Demand Customers** and **Generators** are advised that provision should be made for the earthing of the neutral of each of their **Transformers** connected to the 220 kV **System** by bringing out the neutral and ensuring that the insulation is such that these **Transformers** can be operated unearthed. The **TSO** will consider on a case by case basis the required treatment of the 220kV neutral connection of these **Transformers**. A 220 kV neutral earth switch may be required to be installed in specific instances and **Demand Customers** or **Generators**, as applicable, will be advised of this at the time of the **Connection Offer**. The **TSO** will be responsible for the status of the 220 kV neutral earth switch on these **Transformers**. For the avoidance of doubt, this clause does not apply to **Transformers** located at the **TSO-DSO** boundary, where such issues are agreed between the **TSO** and **DSO**.