



**GRID CODE
CONSULTATION DOCUMENT**

**Grid Code Requirements for System to Generator
Operational Intertripping Scheme**

The purpose of this document is to consult on the above Grid Code Modification Proposal with Authorised Electricity Operators liable to be materially affected by the proposed changes and forms the basis of the subsequent Report to the Authority

Consultation Ref	F/08
Issue	1.0
Date of Issue	21 st November 2008
Responses required by	19th December 2008
Prepared by	National Grid

DOCUMENT LOCATION

National Grid website:

<http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/consultationpapers/>

DISTRIBUTION

Name	Organisation
AEO's	Various
GCRP Members/Alternates	Various
Interested Parties	Various
National Grid Website	

A. INTRODUCTION

1. Paragraph 2 of Condition C14 of the Transmission Licence granted to the National Grid Electricity Transmission plc ("National Grid") provides that National Grid shall, in consultation with Authorised Electricity Operators liable to be materially affected thereby, periodically review the Grid Code and its implementation. That paragraph also requires National Grid, following such review, to send to the Authority:-
 - (a) a report on the outcome of such review;
 - (b) any proposed revisions to the Grid Code as National Grid (having regard to the outcome of such review) reasonably thinks fit for the achievement of the objectives set out in sub-paragraph (b) of Condition C14 of the Transmission Licence; and
 - (c) any written representations or objections from Authorised Electricity Operators (including any proposals by such operators for revisions to the Grid Code not accepted by National Grid in the course of the review) arising during the consultation process and subsequently maintained.
2. This review examines the existing Grid Code provisions for the System to Generator Operational Intertripping Scheme and proposes amendments to the requirements such that additional User clarity and transparency are incorporated within the Code.
3. The proposed changes to the Grid Code were discussed with the Grid Code Review Panel (GCRP) on 15th May 2008. Panel Members agreed that National Grid should issue a Consultation Paper regarding the proposed changes.
4. Comments upon the proposed changes within this consultation should be sent to National Grid by **19th December 2008** as detailed in section C. The comments will be reviewed and responded to.
5. Following this consultation, National Grid will prepare a Report to the Authority detailing National Grid's recommended changes to the Grid Code and all comments/responses received from Authorised Electricity Operators through this consultation. Once sent to the Authority this report will be made available on National Grid's website.
6. Where Authorised Electricity Operators' responses have been marked as confidential they will not be published within the version of the Report to the Authority placed on the National Grid website.
7. The revisions to the Grid Code proposed by National Grid and sent to the Authority, require approval by that body and will, if approved, come into force on such date (or dates) of which you will be notified by National Grid, in accordance with the Authority's approval.

B. DESCRIPTION OF THE PROPOSED AMENDMENTS AND THEIR EFFECTS

8. Background

- 8.1 An Operational Intertrip is utilised by National Grid (in their role as GB System Operator (GBSO)) to operate and manage the GB Transmission System following a secured event (as defined in the GB SQSS) on the GB Transmission System.
- 8.2 An Operational Intertrip can be used to automatically trip circuit breakers to prevent abnormal system conditions arising. The automatic tripping is usually triggered after the tripping of other circuit breakers following some unplanned event. The 'signal' to intertrip is delivered from predetermined transmission circuits should a fault occur on these circuits. The requirement for an Operational Intertrip is usually identified at the time of connecting a User to the GB Transmission System and the site specific information is contained within the Bilateral Agreement that is agreed between National Grid and the applicable party.
- 8.3 The System to Generator Operational Intertrip is a specific type of Operational Intertrip. The associated scheme, introduced by CAP076 (Treatment of System to Generator Intertripping Scheme), classifies four different categories of intertrips, formally defined in the Grid Code, which are utilised by National Grid to manage specific risks on the GB Transmission System. Section 4 (Balancing Services) of the CUSC specifies the commercial arrangements for the arming and disarming of the System to Generator Operational Intertripping Scheme and describes the mechanism for the administration of associated payments.
- 8.4 The current Grid Code provision does not specify what a System to Generator Operational Intertripping Scheme consists of and what a User may expect from the installation of such a scheme. From a User perspective, it is accepted that it would be beneficial if the Grid Code provided additional clarity as to what might comprise a System to Generator Operational Intertripping Scheme; including information regarding the functional specification and performance of the scheme.

9. Proposed Grid Code Changes

- 9.1 It is proposed to amend the Grid Code such that it provides greater transparency and clarity as to the generic information which will be specified within the Bilateral Agreement. It is proposed that, in the event of the proposal being approved, any future Bilateral Agreements specifying a System to Generator Operational Intertripping Scheme will contain the following information:
- category of System to Generator Operational Intertripping Scheme;
 - generating unit(s) which can be instructed or are permanently 'armed';
 - approximate time which it will take the circuit breaker(s) to open automatically after the trip signal has been received;
 - location of the trip signal.

- 9.2 The provisions will also provide generic technical information regarding what a User may expect in terms of the timing of the trip and potential alternative options which may be available in certain operational circumstances.
- 9.3 The definition of System to Operational Intertripping Scheme will also be amended such that it is reflective of the CAP122 (Change to the definition of Intertrip Payment for Power Park Modules) provisions which extended the categories of the System to Operational Intertripping Scheme to Power Park Modules.
- 9.4 The proposed legal changes to the Connection Conditions and Glossary and Definitions are shown in Appendix A.

10. Impact on GB Transmission System

- 10.1 The proposed changes would not have any adverse impact on planning, maintenance and operation of the GB Transmission System.
- 10.2 The provisions, regarding the generic information which will be included in the Bilateral Agreement, will be applicable from the implementation date of the change (subject to the Authority approval) therefore minimising any materiality to the GB Transmission System which may have potentially arisen if the provisions were to be applied retrospectively.

11. Impact on Grid Code Users

- 11.1 The proposals will provide greater User understanding regarding what comprises a System to Generator Operational Intertripping Scheme and information regarding the timing of the automatic opening of the circuit breaker(s) such that they can assess the impact on their plant and apparatus.

12. Assessment Against Grid Code Objectives

- 12.1 The proposed changes outlined in F/08 Consultation document would better facilitate Grid Code Objectives:
- i) to permit the development, maintenance and operational of an efficient, co-ordinated and economical system of the transmission of electricity
- by ensuring that the Grid Code provides additional clarity and transparency to Users regarding the System to Generator Operational Intertripping Scheme.

13. Impact on Industry Documents

13.1 *Impact on Core Industry Documents*

13.1.1 Grid Code Consultation F/08 (Grid Code Requirements for System to Generator Operational Intertripping Scheme) has no impact upon Core Industry Documents.

13.2 *Impact on other Industry Documents*

13.2.1 Grid Code Consultation F/08 (Grid Code Requirements for System to Generator Operational Intertripping Scheme) has no impact upon other Industry Documents.

14. Environmental Impact Assessment

14.1 Grid Code Consultation F/08 (Grid Code Requirements for System to Generator Operational Intertripping Scheme) will have no additional environmental impact as it clarifying an existing administrative provision.

C. RESPONSES

15. This section will contain a summary of responses received during the Consultation and will be completed as part of the Report to the Authority.

16. Views are invited upon the proposals outlined in this report. Especially views on the following areas would be welcomed:

- Impact of the proposals on Grid Code Users.

17. Your formal responses may be:-

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Appendix A: Proposed Grid Code Changes

Connection Conditions Changes

CONNECTION CONDITIONS CODE

Amend clause CC.6.3.17 and insert new CC.6.3.18 as follows:

CC.6.3.17 **NGET** may require that a **System to Generator Operational Intertripping Scheme** be installed as part of a condition of the connection of the **Generator**. Scheme specific details shall be included in the relevant **Bilateral Agreement** and shall, in respect of **Bilateral Agreements** entered into on or after [date of implementation of change], include the following information:

1. the relevant category(ies) of the scheme (referred to as **Category 1 Intertripping Scheme, Category 2 Intertripping Scheme, Category 3 Intertripping Scheme** and **Category 4 Intertripping Scheme**);
2. the **Generating Unit(s)** or **CCGT Module(s)** or **Power Park Module(s)** to be either permanently armed or that can be instructed to be armed in accordance with BC2.8;
3. the time within which the **Generating Unit(s)** or **CCGT Module(s)** or **Power Park Module(s)** circuit breaker(s) are to be automatically tripped;
4. the location to which the trip signal will be provided by **NGET**. Such location will be provided by **NGET** prior to the commissioning of the **Generating Unit(s)** or **CCGT Module(s)** or **Power Park Module(s)**.

Where applicable, the **Bilateral Agreement** shall include the conditions on the **GB Transmission System** during which **NGET** may instruct the **System to Generator Operational Intertripping Scheme** to be armed and the conditions that would initiate a trip signal.

CC.6.3.18 The time within which the **Generating Unit(s)** circuit breaker(s) need to be automatically tripped is determined by the specific conditions local to the **Generator**. This 'time to trip' (defined as time from provision of the trip signal by **NGET** to the specified location, to circuit breaker main contact opening) can typically range from 100ms to 10sec. A longer time to trip may allow the initiation of an automatic reduction in the **Generating Unit(s)** or **CCGT Module(s)** or **Power Park Module(s)** output prior to the automatic tripping of the **Generating Unit(s)** or **CCGT Module(s)** or **Power Park Module(s)** circuit breaker. Where applicable **NGET** may provide separate trip signals to allow for either a longer or shorter 'time to trip' to be initiated.

Glossary and Definitions Changes

GLOSSARY AND DEFINITIONS

Amend the existing definition of '**System to Generator Operational Intertripping Scheme**' as follows:

System to Generator Operational Intertripping Scheme A **System to Generating Unit** or **System to CCGT Module** or **System to Power Park Module** intertripping scheme forming a condition of connection and specified in Appendix F3 of the relevant **Bilateral Agreement**, being either a **Category 1 Intertripping Scheme**, **Category 2 Intertripping Scheme**, **Category 3 Intertripping Scheme** or **Category 4 Intertripping Scheme**.