

AUTHORISATION PROCESS FOR COMMISSIONING, SETTINGS AND DESIGN ASSURANCE **ROLES AND ASSESSMENT PROCESS FOR CONTRACTOR DESIGN APPROVAL ROLES** **AND PRINCIPAL DESIGNER ROLE**

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PURPOSE AND SCOPE

This procedure defines the process of achieving competency authorisations for Commissioning, Settings and Design Assurance roles for individuals working on National Grid Electricity Transmission Assets to deliver the Capital Plan. (See Appendix A - Authorisation process for Commissioning, Settings and Design Assurance Roles).

This procedure also defines the process for assessment of Contractor Design Approval roles for individuals working on National Grid Electricity Transmission Assets to deliver the Capital Plan. (See Appendix B - Assessment Process for Contractor Design Approval Roles).

The requirements of these roles are detailed in TP106 for commissioning, TP107 for relay settings, TP188 for design disciplines.

This procedure also defines the process for assessment of the Principal Designer role for individuals working on National Grid Electricity Transmission Assets to deliver the Capital Plan. (See Appendix C - Assessment Process for Principal Designer Role).

Principal Designer shall undertake duties in accordance with Construction (Design and Management) Regulations 2015 (CDM 2015), UKBP/TP137, UKBP/TP188 and UKBP/TP184.

Individuals who satisfy the requirements of this procedure and pass the assessment modules are TP141 Authorised or TP141 Assessed to work on National Grid assets only. Therefore these authorisations or assessments must not be used as confirmation of competency to work on any assets owned by other companies.

Roles requiring authorisation are:-

Commissioning Authorisations

- Commissioning Panel Chairman
- Commissioning Officer
- Commissioning Engineer (National Grid) & (Supplier)

Settings Engineers Authorisations

- Settings Engineer (Assurance) & (Verification)

Design Assurance Authorisations

- P&C Design Engineer (Assurance)
- Substation HV Design Engineer (Assurance)
- Overhead Line Design Engineer (Assurance)
- HV Cable Design Engineer (Assurance)
- Substation Civil Design Engineer (Assurance)

Roles requiring assessment are:

Contractor Design Approval Assessments

- Contractor Design Approval Engineer (P&C)

- Contractor Design Approval Engineer (Substation HV)
- Contractor Design Approval Engineer (Overhead Line)
- Contractor Design Approval Engineer (HV Cable)
- Contractor Design Approval Engineer (Substation Civil)

Principal Designer Assessments

- Principal Designer (Pre Contract)
- Principal Designer (Design & Build)

Note ! The appointed Principal Designer at the pre contract award stage shall be referenced as Principal Designer (Pre Contract). The appointed Principal Designer at the post contract award stage shall be referenced as Principal Designer (Design & Build).

It is recognised that for investments of medium and low complexity the full application of this Transmission Procedure (TP) may not provide the most cost efficient means of delivering that investment and hence TP governance options as per UKBP/TP500 Appendix A can be applied to this procedure.

TP governance options defined in UKBP/TP500 Appendix A include those that are already detailed in this Transmission Procedure and those that are additional and not detailed in this Transmission Procedure.

Amendments to this procedure shall be reflected in UKBP/TP500 Appendix A (if required) and may result in re-issue of UKBP/TP500 within the same period.

PART 1 - PROCEDURAL

1 RESPONSIBILITIES

1.1 Authorising/Assessment Manager

Manager appointed by National Grid is responsible for:-

- a) Authorising or assessment of new engineers,
- b) Reviewing, auditing and re-authorising or re-assessment of existing engineers,
- c) Managing the Assessment Centre training, and
- d) Providing guidance on the authorisation and assessment process.
- e) Chair of the Commissioning and Design Authorisation/Assessment User Group to ensure consistent application of TP141 authorisation/assessment process.

All formal authorisations and assessments under this procedure are co-ordinated and done centrally within National Grid Capital Delivery Technical Assurance. This covers National Grid, Consultants, Frame work Consultants and all Contractors. The Authorising/Assessment Manager is the Technical Process Manager within Capital Delivery Technical Assurance.

The Authorising/Assessment Manager may delegate authority to the Course Director as and when required.

1.2 Course Director

The Course Director is responsible for:-

- a) Prior to the assessment module confirming administration arrangements with the Assessment Centre when required. Ensuring availability of training material, joining instructions, questionnaires etc have been sent to the delegates. Checking availability of assessors and the appropriate presentation material for them.
- b) During the assessment managing the sessions with assessors, collating delegate listing and forwarding a copy to the Authorising/Assessment Manager.
- c) After the course, forwarding any comments on course material, suggestions for improvement, etc and candidates results to the Authorising/Assessment Manager.

1.3 Assessors

Assessors are experienced engineers providing training and/or assessment at the Assessment Centre.

1.4 Authorising/Assessment Administrator

The Authorising/Assessment Administrator is responsible for

- a) Maintaining the master Authorisation/Assessment Register on Livelink
- b) Organising venues for Assessment Centre and training materials for the candidates.
- c) Issuing re-authorisation or re-assessment reminders to the candidates, and
- d) Preparing folders and issuing to candidates (for Commissioning, Settings and Design Assurance authorisations only) following approval by the Authorising/Assessment Manager.
- e) Managing the training and assessment programme applicable to this procedure.

2 AUTHORISATION PROCESS FOR COMMISSIONING, SETTINGS AND DESIGN ASSURANCE ROLES

2.1 Commissioning Authorisation Process

Commissioning Panel Chairman, Commissioning Officer, Commissioning Engineer (NG) and Commissioning Engineer (Supplier) authorisation processes (Basic and Advanced) are detailed in Appendix A.

Appendix A also details a number of formal roles which do not require separate authorisation. E.g. Assistant Commissioning Engineer, Specialist Testing Engineer, Commissioning Technicians and competency requirements for preparing Switching Programmes and commissioning non main stream work.

Supporting documentation can be found in Attachment A1 to A8 (of Appendix A) as follows:

Attachment A1 (of Appendix A): Nomination Criteria for Commissioning Authorisation Roles (Basic)

Attachment A2 (of Appendix A): Commissioning Experience Record Part 1 for Authorisation Roles (Basic) – National Grid and Suppliers

Attachment A3 (of Appendix A): Commissioning Experience Record Part 2 for Authorisation Roles (Basic) – National Grid and Supplier

Attachment A4 (of Appendix A): Nomination Criteria for Commissioning Authorisation Roles (Advanced)

Attachment A5 (of Appendix A): Commissioning Experience Record Part 1 for Authorisation Roles (Advanced) – National Grid and Suppliers

Attachment A6 (of Appendix A): Commissioning Experience Record Part 2 for Authorisation Roles (Advanced) – National Grid and Supplier

Attachment A7 (of Appendix A): Guidance for Completion of Attachments A1, A2, A3, A4, A5 and A6 (of Appendix A)

Attachment A8 (of Appendix A): Commissioning Technician

2.2 Settings Authorisation Process

Settings Engineer (Assurance) and Settings Engineer (Verification) Authorisation process is detailed in Appendix A.

2.3 Design Assurance Authorisations Process

Design Assurance authorisations process is detailed in Appendix A.

Design Assurance authorisations can be achieved in any of the following five disciplines:-

- a) P&C Design Engineer (Assurance)
- b) Substation HV Design Engineer (Assurance)
- c) Overhead Line Design Engineer (Assurance)
- d) HV Cable Design Engineer (Assurance)
- e) Substation Civil Design Engineer (Assurance)

Supporting documentation can be found in Attachment A9 to A12 (of Appendix A) as follows:

Attachment A9 (of Appendix A): Nomination criteria for Design Assurance Authorisation (P&C and Substation HV)

Attachment A10 (of Appendix A): Nomination criteria for Design Assurance Authorisation (OHL and HV Cable Design)

Attachment A11 (of Appendix A): Nomination criteria for Design Assurance Authorisation (Substation Civil Design)

Attachment A12 (of Appendix A): Design Assurance Authorisation Scoring Matrix

3 CONTRACTOR DESIGN APPROVAL ASSESSMENTS

3.1 Contractor Design Approval Assessment Process

Contractor Design Approval assessment process is detailed in Appendix B

Contractor Design Approval assessment can be achieved in any of the following five disciplines:-

- a) Contractor Design Approval Engineer (P&C)

- b) Contractor Design Approval Engineer (Substation HV)
- c) Contractor Design Approval Engineer (Overhead Line)
- d) Contractor Design Approval Engineer (HV Cable)
- e) Contractor Design Approval Engineer (Substation Civil)

Supporting documentation can be found in Attachment B1 (of Appendix B) and B2 (of Appendix B) as follows:

Attachment B1 (of Appendix B): Contractor Design Approval Engineer Assessment - Scoring Matrix

Attachment B2 (of Appendix B): Application for TP141 Assessment Form

4 PRINCIPAL DESIGNER ASSESSMENTS

4.1 Principal Designer Assessment Process

Principal Designer assessment process is detailed in Appendix C

Principal Designer assessment is referenced as follows:-

- a) Principal Designer (Pre Contract)
- b) Principal Designer (Design & Build)

The appointed Principal Designer at the pre contract award stage shall be referenced as Principal Designer (Pre Contract).

The appointed Principal Designer at the post contract award stage shall be referenced as Principal Designer (Design & Build).

Supporting documentation can be found in Attachment C1 (of Appendix C) as follows:

Attachment C1 (of Appendix C): Application for TP141 Principal Designer Assessment Form.

5 GENERAL

5.1 Changes in Legislation or Business Procedures

Capital Delivery will review TP141 periodically to ensure that significant changes in legislation and changes to other business procedures are considered.

If Capital Delivery consider the changes significant or have significant learning points from incidents then they may provide workshops or rollouts to convey the required information.

National Grid, Consultants, Frame work Consultants, Contractors and individuals will be responsible for ensuring attendance if required by NG, failure to do so may result in the withdrawal of an individuals TP141 authorisation or assessment and removal from the project.

6 FORMS AND RECORDS

UKBP/TP141.01 - Commissioning Experience Record Part 1 & 2 For Authorisation Roles (Basic)

UKBP/TP141.02 - Commissioning Experience Record Part 1 & 2 For Authorisation Roles (Advanced)

UKBP/TP141.03 - Recommendation & Endorsement to Attend TP141 Tutorials

UKBP/TP141.04 – Commissioning Technicians

UKBP/TP141.05 - Commissioning, Settings & Design Assurance Engineer Authorisations Record

UKBP/TP141.06 – Application for TP141 Assessment.

UKBP/TP141.07 – Application for TP141 Principal Designer Assessment.

PART 2 – DEFINITIONS AND DOCUMENT HISTORY

7 DEFINITIONS

7.1 Assessment Centre

National Grid Training Centre at Eakring or alternative agreed venues for formal assessment.

7.2 Commissioning and Design Authorisation/Assessment User Group

Members for this group are drawn from Technical Assurance, ETAM, Market Operation, Transmission Network Control Centre, Contractors and Human Resources and are accountable for defining the requirements for authorisation and assessment, monitoring & auditing the authorisation and assessment process.

7.3 Basic Commissioning Authorisation

Basic Commissioning Authorisation, when conferred on a Commissioning Panel Chairman, a Commissioning Engineer or a Commissioning Officer, gives authority to the engineer concerned to discharge these roles on a limited range of projects associated with asset replacement. For example Circuit Breaker change, Protection change, and the installation of SCS etc.

7.4 Advanced Commissioning Authorisation

Advanced Commissioning Authorisation, when conferred on a Commissioning Panel Chairman, a Commissioning Engineer or a Commissioning Officer gives authority to the engineer concerned to discharge these roles on all projects including issuing of HVSCC documents. This does not imply expertise on all equipment and schemes but recognises that an appropriate level of training has been undertaken and experience achieved.

7.5 Commissioning Roles

The roles of the Commissioning Panel Chairman, Commissioning Engineer (National Grid), Commissioning Engineer (Supplier) and Commissioning Officer are all defined in TP106.

7.6 Settings Roles

The roles of Settings Engineer (Assurance) and Settings Engineer (Verification) are defined in TP107.

7.7 Design Roles

The roles of Design Engineer (Assurance) and Contractor Design Approval Engineers for a specific technology (i.e. P&C, Substation HV, OHL, HV Cables and Substation Civil) are defined in TP188.

7.8 Principal Designer (Pre Contract)

The Principal Designer shall undertake duties in accordance with Construction (Design and Management) Regulations 2015 (CDM 2015), UKBP/TP137, UKBP/TP188 and UKBP/TP184 relevant to the period of appointment.

The appointed Principal Designer at the pre contract award stage shall be referenced as Principal Designer (Pre Contract).

7.9 Principal Designer (Design & Build)

The Principal Designer shall undertake duties in accordance with Construction (Design and Management) Regulations 2015 (CDM 2015), UKBP/TP137, UKBP/TP188 and UKBP/TP184 relevant to the period of appointment.

The appointed Principal Designer at the post contract award stage shall be referenced as Principal Designer (Design & Build).

7.10 Livelink

External web based application for storing, sharing and distributing information.

7.11 PDSA

Post Delivery Support Agreement.

7.12 Delivery Unit

Delivery Unit is the National Grid organisation or NG Joint venture project managing the investment delivery. e.g. HVDC Links, OHL, Substation or cable delivery model.

7.13 Consultants/Framework Consultants

These are engaged by National Grid and are agency or managed services contracts and are managed in the Delivery Unit.

Or

These are engaged by National Grid employing a company to provide a consultancy service so that the company is responsible.

7.14 Employing Organisation

Employing organisation - NG Delivery Unit, Consultants/Framework Consultants, Capital Delivery-Project Development, ETAM Operations, Contractors and Principal Contractors.

8 AMENDMENT RECORD

Issue	Date	Summary of Changes / Reasons	Author(s)	Approved By (Inc. Job Title)
		See previous version for history		
9	November 2013	Design Engineer (Verification) renamed to Contractor Design Approval Engineer and to be TP141 Assessed in line with new process described in Appendix B. Authorisation process for Commissioning, Settings and Design Assurance Roles now located in Appendix A. Process added to enable Temporary Advanced Commissioning Engineer (NG) to have Temporary Authorisation extended by a further 1 year.	Ian Price Capital Delivery Technical Assurance	EEPIG
10	April 2015	Amended to implement CDM 2015. New role added- Principal Designer. Appendix C added for Principal Designer role.	Ian Price Capital Delivery Technical Assurance	Ian Cartwright (via delegated authority by Shaun Hughes)

9 IMPLEMENTATION

9.1 Audience Awareness and Training Requirements

Audience	Purpose Compliance (C) / Awareness (A)	Training Needs N/A / Informal / Workshop / Formal Course	Training Target Date	Notification Method Memo / letter / fax / email/ team brief / other (specify)
Capital Delivery	C	N/A	N/A	Engineering Bulletin
Suppliers/Contractors	C	N/A	N/A	Engineering Bulletin
Consultants and Framework Consultants	C	N/A	N/A	Engineering Bulletin
ETAM Operations	C	N/A	N/A	Engineering Bulletin

9.2 Training Requirements

Training Needs N/A / Informal / Workshop / Formal Course	Training Target date	Implementation Manager
N/A	N/A	N/A

9.3 Compliance

Carried out by Capital Delivery Technical Assurance via Technical Assurance audit.

9.4 Procedure Review Date

5 years from publication date.

PART 3 – GUIDANCE NOTES AND APPENDICES

10 REFERENCES

TP106	Equipment Commissioning and Decommissioning
TP107	Protection and Control Relay Settings
TP 137	The Implementation of Construction (Design & Management) Regulations (CDM) 2015 for the Transmission Electricity Capital Programme
TP144	Assessment Process for National Grid Project Management, CDM Management and Principal Contractor Site Management prior to operating on National Grid Assets
TP153	Coordination of HV System Stage by Stage Connections for Construction and Maintenance
TP163	Site Installation
TP188	Transmission Construction Electricity - Design Management
CDBP 216	Auditing by Capital Delivery Technical Assurance (CDTA)
NSI 33	Additions / Removal of Equipment to/from the System
TP184	Procedural Requirements for the Management of Temporary Works.

APPENDIX A - AUTHORISATION PROCESS FOR COMMISSIONING, SETTINGS AND DESIGN ASSURANCE ROLES**A1 INTRODUCTION**

This appendix defines the process of achieving competency authorisations for Commissioning, Settings and Design Assurance roles for individuals working on National Grid Electricity Transmission Assets to deliver the Capital Plan.

The requirements of these roles are detailed in TP106 for commissioning, TP107 for relay settings and TP188 for design assurance disciplines.

Roles requiring authorisation are:-

Commissioning Authorisations

- Commissioning Panel Chairman
- Commissioning Officer
- Commissioning Engineer (National Grid) & (Supplier)

Settings Engineers Authorisations

- Settings Engineer (Assurance) & (Verification)

Design Assurance Authorisations

- P&C Design Engineer (Assurance)
- Substation HV Design Engineer (Assurance)
- Overhead Line Design Engineer (Assurance)
- HV Cable Design Engineer (Assurance)
- Substation Civil Design Engineer (Assurance)

A2 RESPONSIBILITIES**A2.1 Employing Organisation**

The Employing organisation is responsible for:-

- a) Nomination of a single point of contact (SPOC) from within the Employing organisation to liaise with Capital Delivery, Technical Assurance. Communications outside of this arrangement will be rejected.

A2.2 Line Manager (Employing Organisation)

Line Manager is responsible for:-

- a) Nominating candidates with appropriate qualification, training and knowledge of National Grid Policy, Procedures and Technical Specifications for the assessment centre based modules.
- b) Ensuring that authorised individuals undergo continuing professional development with respect to National Grid Policy, Procedures and Technical Specifications
- c) For National Grid authorised engineers, reviewing authorisation records to ensure experience record is up to date and signing the last column of the Experience Record.
- d) For Contractor authorised engineers enacting commissioning roles, ensuring that an authorised engineer in the appropriate role from National Grid has confirmed the Experience Record.

- e) For authorised engineers for Design Assurance roles and Setting roles ensuring experience record is up to date and signing the last column of the Experience Record.
- f) Ensuring that when re-authorisation is required after three years the record is submitted to the Authorising/Assessment Manager (six weeks in advance of the authorisation expiring).
- g) Notifying the Authorising/Assessment Manager if the Authorised Engineer change roles, joins or leaves the organisation (in which case the authorisation folder should be returned to the Authorising/Assessment Manager).

A2.3 TP141 Authorised Individual

TP141 Authorised individual is responsible for:-

- a) Ensuring their authorisation documentation is appropriately maintained and is jointly assessed with their Line Manager at least once a year with a view to retaining authorisation, as and where appropriate.
- b) Discharging the TP141 Authorised role in accordance with the relevant National Grid procedures and in a professional and diligent manner.
- c) Ensuring they do NOT undertake procedural tasks outside the immediate scope of their authorisation excepting the caveats that apply to areas qualifying as 'Specialist' Design as defined in TP188 and which relate to Authorised Design Engineers only.

A3 COMMISSIONING AUTHORISATIONS

A3.1 Nomination of Candidates

The Line Manager shall nominate the candidate at least three months before the authorisation is required. The candidate's CV and completed training records are required to be submitted to the Authorising/Assessment Manager for assessment. This shall be endorsed as an accurate reflection of candidate's capability and experience by the Line Manager.

Note! For Commissioning Engineer (NG) nominations the Line Manager shall be ETAM Operations - Delivery Manager.

The criteria for nomination are defined in Attachments A1, A2 & A3 (of Appendix A) for Basic and Attachments A4, A5 & A6 (of Appendix A) for Advanced Authorisations.

If CV is not acceptable then candidates cannot proceed any further in progress to authorisation.

A3.2 Commissioning Panel Chairman Authorisation Process

A3.2.1 To obtain Basic Authorisation the candidate is required to attend two commissioning panel meetings, complete and pass the following two modules at the Assessment Centre and pass the Health & Safety assessment:-

- a) Basic Management, and
- b) Technical Building Block

A3.2.2 The Basic Management Module comprises three components.

- a) Management Process Tutorial: this consists of TP106, TP107, TP153, NSI33 and related procedures.
- b) Case Study: consisting of a simulated commissioning exercise.
- c) Procedural assessment papers on TP106 & TP107. The purpose of this paper is to assess candidate's knowledge and understanding on the procedural requirement to manage commissioning.

A3.2.3 The Technical Building Block Module consists of a tutorial on basic equipment and schemes, to provide a rudimentary understanding of technical performance of the system and technical terminology. As an alternative the Technical Principles (2 days) under the Basic Technical Module can be completed to satisfy this requirement. The candidate is required to pass an assessment paper.

A3.2.4 The Health & Safety assessment consists of a questionnaire designed to assess Candidate's knowledge on Health & Safety in line with CDM 2015. There is no requirement to undertake this module if the Candidate is authorised as Delivery Unit Project Engineer under TP144.

A3.2.5 A candidate applying for Advanced Authorisation is required to gain a minimum of 6 months experience and chair at least five basic commissioning panel meetings before completing the Advanced Management Module.

A3.2.6 The Advanced Management Module comprises three components.

- a) Management Process Tutorial: this consists of TP106, TP153, NSI33 and related procedures.
- b) Case Study: consisting of a simulated commissioning exercise covering more advanced subject such as requirement and issuing of HVSCC and Operational Notification procedure.
- c) Procedural assessment paper on TP106. The purpose of this paper is to assess candidate's knowledge and understanding of the procedural requirement to manage commissioning at this level.

A3.2.7 After the completion of the appropriate assessments and papers the Course Director will notify the results to the Authorising/Assessment Manager.

A3.2.8 Candidates successfully displaying required competence in the assessed modules will be notified by the Authorising/Assessment Manager, awarding them the required authorisations. Candidates not displaying the required competence in the assessed modules will be notified by the Authorising/Assessment Manager and provide feedback on further development requirement. In addition, the candidate is required to gain at least six months of experience before reapplying for this authorisation.

A3.2.9 In the event of unavailability of formal training and assessment courses held at the Assessment Centre, which could result due to lack of required nominations, the experienced candidate can be awarded a temporary authorisation for a period of up to one year subject to the following criteria. Temporary Authorisation limitation will be noted as 'Temporary Authorisation' on the authorisation record.

- a) Meet the minimum nomination criteria as defined above
- b) Pass the TP106 questionnaire, and

- c) Pass the Technical Building Block questionnaire

The 'Basic' authorisation' can be upgraded to 'Advanced' provided the candidate has gained sufficient experience at the basic level. Again candidate's record will be marked as 'Temporary Authorisation'.

A3.3 Commissioning Officer and Commissioning Engineer Authorisation Process

- A3.3.1 For the basic authorisation the candidates are required to complete and pass the following four modules at the Assessment Centre:-

- a) Basic Technical,
- b) Basic Management
- c) Basic Design, and
- d) Health & Safety

- A3.3.2 The Basic Technical Module consists of three components and takes five days of Assessment Centre training to complete:-

- a) Technical Principles: this comprises tutorial on basic technical aspects associated with power system performance, which is a requirement for commissioning.
- b) Practical: this comprises practical commissioning exercises at the training substation.
- c) Switching Programme: this comprises tutorial and assessment on the requirements and preparation of switching programmes.

- A3.3.3 For Basic Technical Module the candidate is required to pass a questionnaire. The purpose of this paper is to assess the candidate's knowledge and understanding gained at this Assessment Centre.

- A3.3.4 The Basic Management Module is identical to the module detailed above under Commissioning Panel Chairman authorisation.

- A3.3.5 The Basic Design Module for commissioning is prepared to assess the candidate's understanding of basic transmission design requirement. The objective is to assess the understanding of the purpose of installed equipment, thereby to eliminate risks to health, safety, and the environment, including security and reliability of the power system.

- A3.3.6 The design module is to be undertaken in one day. It comprises two components, questionnaire and circuitry, each lasting about half a day, both of which must be passed. Failure to pass it first time will need further experience for at least six months before the module can be retaken. The Subject Matter Syllabus for this module is available on Livelink.

- A3.3.7 Candidates successfully passing both parts of the Basic Design module for commissioning will be granted Basic authorisation.

- A3.3.8 The Health & Safety Module consists of a questionnaire designed to assess Candidate's knowledge on Health & Safety in line with CDM 2015.

- A3.3.9 Candidates applying for the Advanced Authorisation are required to gain a minimum of six months experience, in the appropriate role and complete the Advanced Technical & Advanced Management modules.

A3.3.10 Advanced Technical Module is designed to ensure that those concerned with the technical aspects of commissioning have a broad understanding of the more technically complex items of equipment connected to the transmission system, particularly from a power system perspective. The candidates will be given a questionnaire at the end of the course, which is required to be submitted to the Course Director within 4 weeks of completing the course.

A3.3.11 The Advanced Management Module is identical to the module detailed above under Commissioning Panel Chairman authorisation.

A3.3.12 The candidates successfully displaying required competence in the assessed modules will be notified by the Authorising/Assessment Manager, awarding the required authorisations.

Candidates not displaying the required competence in the assessed modules will be notified by the Authorising/Assessment Manager with feedback on further development requirement. In addition, the candidate is required to gain at least six months of experience before reapplying for this authorisation.

The only exception will be where a candidate with a Temporary Authorisation is enacting the role of Advanced Commissioning Engineer (NG) and fails one of the Advanced Assessment modules (either Advanced Technical Module or Advanced Management Module) then the Temporary Authorisation may be extend for a further 1 year only. – see section A3.3.15 below.

A3.3.13 In the event of unavailability of formal training and assessment courses held at the Assessment Centre, which could result due to lack of required nominations, the experienced candidate can be awarded a temporary authorisation for a period of up to one year subject to the following criteria.

- a) Meet the minimum nomination criteria as defined above, and
- b) Pass the Basic Design Module for commissioning

Temporary Authorisation limitation will be noted as 'Temporary Authorisation' on the authorisation record.

The 'Basic' authorisation' can be upgraded to 'Advanced' provided the candidate has gained sufficient experience at the basic level. Again candidate's record will be marked as 'Temporary Authorisation'.

A3.3.14 A candidate with a Temporary Authorisation shall ensure that they attend the formal training and assessment modules prior to the expiry of the Temporary Authorisation. ie within 1 year.

The candidate will be granted full authorisation when they pass all the required assessment modules.

Candidates not displaying the required competence in the assessed modules will be notified by the Authorising/Assessment Manager with feedback on further development requirement. In addition, the candidate is required to gain at least six months of experience before reapplying for authorisation.

A3.3.15 In situations where a candidate with a Temporary Authorisation is enacting the role of Advanced Commissioning Engineer (NG) and fails one of the Advanced Assessment modules (either Advanced Technical Module or Advanced Management Module) then the Temporary Authorisation may be extend for a further 1 year only- subject to the following:

- a) The candidates Line Manager shall provide a written statement confirming that the candidate has the required knowledge, skills and experience to continue to enact the role of Advanced Commissioning Engineer (NG). This shall be supported by at least 3

statements from the candidate's peers including a TP141 Authorised (Full) Advanced Commissioning Engineer (NG).

- b) All HVSCC's shall be countersigned by a fully authorised Advanced Commissioning Engineer (NG).
- c) All Commissioning Switching Programme shall be countersigned by a fully authorised Advanced Commissioning Engineer (NG).
- d) The candidate shall be limited to one further attempt at the previously failed Advanced Assessment during the duration of the Temporary Authorisation (1 year Temporary Authorisation + extension 1 year).

Temporary Authorisation limitation will be noted as 'Temporary Authorisation+1 year (Countersignature for HVSCC & CSP Required)' on the authorisation record.

- A3.3.16 A candidate with a "Temporary Authorisation+1 year (Countersignature for HVSCC & CSP Required)" shall ensure that they attend the formal training and assessment module previously failed prior to the expiry of the "Temporary Authorisation +1 year (Countersignature for HVSCC & CSP Required)".

The candidate will be granted full authorisation when they pass all the required assessment modules.

Candidates not displaying the required competence in the assessed modules will be notified by the Authorising/Assessment Manager with feedback on further development requirement. In addition, the candidate is required to gain at least six months of experience before reapplying for authorisation.

A3.4 Switching Programmes

No formal authorisation is required for an engineer preparing the switching programmes. However, as a minimum the engineer producing these documents is required to complete the two days switching tutorial as part of the Basic Technical Module held at the Assessment Centre.

A3.5 Assistant Commissioning Engineer

- A3.5.1 This role does not itself require authorisation. The purpose of this role is to provide on site training to a reasonably experienced engineer to achieve full authorisation. This does not imply that the standard of commissioning work is reduced. Use of this role to discharge the role of an authorised Commissioning Engineer through (in effect) a proxy is equally unacceptable. The rules pertaining to the use of an Assistant Commissioning Engineer are as follows:-

- a) Appointment of this role must be notified to the Commissioning Panel Chairman and recorded in the minutes of the commissioning panel meetings.
- b) An authorised Commissioning Engineer will always remain fully accountable for all work undertaken by an Assistant Commissioning Engineer and provide 'Local Supervision'. The authorised Commissioning Engineer will be available at the location to attend the point of work as necessary. This will include signing to accept, authorise and approve all documentation.
- c) An authorised Commissioning Engineer must always define the work to be undertaken by an Assistant Commissioning Engineer and must always evaluate the quality and accuracy of the work on completion.

- d) An authorised Commissioning Engineer can supervise the work of one Assistant and one Trainee Commissioning Engineer simultaneously.

A3.5.2 An authorised Commissioning Engineer can be assisted by a Trainee Commissioning Engineer who is relatively inexperienced with commissioning work, for example a new graduate engineer. The rules pertaining to the use of a Trainee Commissioning Engineer are as follows:-

- a) An authorised Commissioning Engineer will always remain fully accountable for all work undertaken by a Trainee Commissioning Engineer and will provide 'Personal Supervision'. The authorised Commissioning Engineer will be present at the point of work at all times.
- b) An authorised Commissioning Engineer must always define the work to be undertaken by a Trainee Commissioning Engineer and must always evaluate the quality and accuracy of the work on completion.
- c) An authorised Commissioning Engineer can supervise the work of one Assistant and one Trainee Commissioning Engineer simultaneously.

A3.6 Specialist Testing Engineer

Specialist Testing Engineers are defined as those engineers for whom National Grid do not require a certificate of authorisation in carrying out specialist tasks in an isolated and defined area – for example, a feeder main protection.

For main stream work affecting the power system all Specialist Testing Engineers will work to the requirements of an authorised Commissioning Engineer (Supplier) who will have overall responsibility for test documentation.

A maximum of three Specialist Testing Engineers (e.g. Protection & Control, Substation HV and SGT) can be employed under 'Local Supervision' with each authorised Commissioning Engineer (Supplier).

Where the Specialist Testing Engineer or Assistant Commissioning Engineer is used, they must be notified to the Commissioning Panel and recorded in the Commissioning Panel meeting minutes.

Specialist Testing Engineers will not preclude the employment of Assistant or Trainee commissioning engineers working with an authorised Commissioning Engineer (Supplier).

A Specialist Test Engineer could also work under the 'Local Supervision' of an authorised commissioning engineer (National Grid). An example of this is a PDSA engineer attending site to investigate a problem on an in service equipment.

A3.7 Commissioning Technicians

Projects of a lesser complexity that impose lower risk to the electrical power system can be commissioned by staff without the need for them to undertake a full commissioning authorisation assessment. The staff carrying out these duties must be competent and suitably experienced 'Commissioning Technicians' in the required discipline and can be authorised on the basis as detailed below. National Grid MDE technicians already holding Senior Authorised Person (SAP1, 2 or 3 as appropriate) status can be suitably assessed and authorised to undertake lower risk commissioning work. However, for similar authorisation, suppliers' technicians do not require the qualification to hold SAP status.

The following are examples of some of the projects, that either wholly or contain an element of work, which can be classified as lower risk. Hence 'Commissioning Technicians' can be considered to undertake lower risk commissioning work.

Air Systems, Batteries, Diesel Systems, Metering, Environmental Systems, Cable Cooling System, Optel Project, ISS, Telecommunications etc.

The assessment for this role must be undertaken by candidate's Line Manager by reviewing CV, having a proven experience and assessing an appropriate understanding of the work - which shall be confirmed and supported by a TP141 authorised 'Advanced Commissioning Engineer'. This must be recorded on the attached form – Attachment A8 (of Appendix A).

A 'Commissioning Technician' (National Grid) must be competent, experienced in the required discipline and hold SAP authorisation – this being confirmed by candidate's line manager by signing Attachment A8 (of Appendix A).

A 'Commissioning Technician' (Supplier) must be competent and experienced in the required discipline, this being confirmed by candidate's line manager by signing Attachment A8 (of Appendix A).

An authorised 'Commissioning Technician' can sign and accept all commissioning documentation associated within the limits of the authorised role.

A3.8 Ancillary Equipment

An authorised commissioning engineer must commission all 'main stream' work; the commissioning work which can affect the power system. For work which is other than main stream, e.g. purely civil engineering projects formally agreed alternative authorisation arrangements defined by the National Grid representative on the Commissioning Panel may be utilised.

The alternative authorisation arrangement can be such as sufficient checks on the competency and skill of that engineer carrying out the commissioning.

Every effort should be made to minimise the risk to the power system. One way this can be achieved is to ensure National Grid engineers are authorised if the small Suppliers engineers are not, for example when undertaking WTI projects.

A4 SETTINGS AUTHORISATION

A4.1 Nomination of Candidates

The Line Manager shall nominate the candidate at least three months before the authorisation is required. The candidate's CV is required to be submitted to the Authorising/Assessment Manager for assessment.

The criteria for nomination are as follows:-

- a) Qualified in electrical engineering to a minimum HNC/HND level.
- b) Be experienced and technically proficient on power system theory.
- c) Have completed relay setting calculations under the supervision of an authorised engineer on at least five circuits.

If the CV is not acceptable then candidates cannot proceed any further in progress to authorisation.

A4.2 Setting Engineer Authorisation Process

The candidates will be required to take the main technical paper at the Assessment Centre. The Subject Matter Syllabus for this assessment is available on Livelink.

The objective of this module is to assess the candidate on a broad spectrum of the more common fault calculations and relay settings, with reference to knowledge that would be expected to be at the 'fingertips' of a practising settings engineer.

Candidates applying for the 'Assurance' role are required to pass the procedural assessment paper on the TP107. The purpose of this module is to assess candidate's knowledge and understanding on the procedural requirement to manage relay settings.

The candidates successfully displaying required competence in the assessed modules will be notified by the Authorising/Assessment Manager, awarding the required authorisations to undertake Verification or Assurance roles.

Candidates not displaying the required competence in the assessed modules will be notified by the Authorising/Assessment Manager with feedback on further development requirement and timescale for reapplying.

A5 DESIGN ASSURANCE AUTHORISATION

A5.1 Scope of Design Assurance Authorisation

The Design Assurance authorisations can be achieved in any of the following five disciplines.

- a) P&C Design Engineer (Assurance)
- b) Substation HV Design Engineer (Assurance)
- c) OHL Design Engineer (Assurance)
- d) HV Cable Design Engineer (Assurance)
- e) Substation Civil Design Engineer (Assurance)

A5.2 Nomination Process

The Line Manager shall nominate the candidate at least three months before the authorisation is required. The candidate's CV is required to be submitted to the Authorising/Assessment Manager for assessment. This shall be endorsed as an accurate reflection of candidate's capability and experience by the Line Manager.

The nomination criteria for Design Assurance Engineer Authorisation by discipline are defined in Attachment A9, A10 & A11 (of Appendix A). In order to expedite the assessment process it is recommended that CV's are prepared to specifically and unambiguously highlight the relevant areas of candidate compliance (i.e. qualifications, experience etc.).

Where a CV does not achieve the necessary score the candidate may not progress further in the authorisation process. In this instance the Line Manager shall be duly notified with the CV's areas of deficiency identified.

The nomination criteria for Protection & Control Design Engineer (Assurance) authorisation as defined in Attachment A9 (of Appendix A) can be substituted by satisfactory completion of formal training developed by Engineering Assurance – Substations. The full content and syllabus for this training is detailed in the 'National Grid Protection & Control Engineer Training Manual'.

Should the Line Manager believe a candidate whose CV has been rejected is suitable for authorisation they may submit a modified CV for re-consideration. Where they believe the nomination criteria does not adequately reflect a candidate's suitability for the authorised role they may appeal to the Engineering Assurance Manager – Substations or Engineering Assurance Manager - Cable Systems or Engineering Assurance Manager - OHL or Technical Process Manager -for civils depending on discipline. In this instance the Line Manager shall make written representation to the relevant Assurance manager setting out the factors that cannot be articulated via the CV for consideration and arbitration.

A5.3 Design Assurance Authorisation Process

Candidate must complete training within their organisations in the following areas. (This must be noted and confirmed in the Experience Records):-

- a) IOSH Managing Safely or equivalent
- b) Waste Management or the CBT package produced by National Grid.
- c) Environmental awareness or equivalent.

Candidates must pass the Health & Safety assessment module for designers as defined in the Subject Matter Syllabus available on Livelink.

Candidates must pass the required design assessment module for each authorisation as defined in the Subject Matter Syllabus available on Livelink.

On successfully displaying the required competence in the assessed modules the Candidate and his/her Line Manager or a nominated Single Point of Contact (SPOC) will be notified by the Authorising/Assessment Manager, awarding the required authorisations. This can be to undertake Assurance roles.

Candidates not displaying the required competence in the assessed Design and/or Health & Safety Modules will be notified by the Authorising/Assessment Manager and feedback provided on further development requirements. For Design Module the candidate is required to gain at least six months of experience before reapplying for this authorisation whilst for Health & Safety Module the candidate can re take the module after one month on evidence of undertaking relevant Health & Safety training.

The scoring Matrix for each Design Assurance Authorisation is defined in Attachment A12 (of Appendix A).

For any of the design assurance authorisations if the candidate's nomination assessment based on the qualification and experience falls within the 'Temporary' category then this temporary authorisation can be awarded for a period of up to three years. The Authorising/Assessment Manager will provide guidance on the development needed to achieve 'Full' authorisation at the end of this three year period. If after three years the required criteria to obtain full authorisation is not achieved then the existing 'Temporary' authorisation will be withdrawn.

A5.4 Lead Design Engineer (Assurance)

Lead Design Engineer (Assurance) shall hold a TP141 Design Authorisation.

A6 GENERAL

A6.1 Assessment Modules

Technical Assurance will facilitate and mark all assessment papers.

Syllabus for all assessment papers are available on Livelink.

Attachment A13 (of Appendix A) details the Training and Assessment requirement for each role defined in this procedure.

A6.2 Authorisation Documentation

Attachment A14 (of Appendix A) defines the Authorisation Record. The Authorising Manager will initially complete this record. After this each authorised engineer is responsible for the retention and maintenance of his own authorisation record.

The Certificate of Authorisation can be presented to Project Engineers as confirmation of authorisation.

A6.3 Period of Authorisation

Full authorisation is awarded when the entire assessment criterion is fully met. This authorisation shall be valid for a period of three years.

Temporary authorisation shall be valid for a maximum of one or three years subject to the criteria defined in the Attachment A12 (of Appendix A).

The individual is ultimately responsible for ensuring that they monitor the expiry of their own TP141 Authorisation.

Three months prior to the expiry of an authorisation, the authorised engineer shall submit his experience record to renew the current authorisation, otherwise the role can not be undertaken beyond the authorisation expiry date.

Under certain extenuating circumstances as judged by Authorising/Assessment Manager, the authorisation can be extended by a further six months.

A6.4 Reauthorisation

If reauthorisation is required the Experience Record must be completed, confirmed by those as detailed in section A2.2 above and the original document sent to the Authorising/Assessment Manager.

Re-authorisation shall be given by the Authorising/Assessment Manager upon evidence of satisfactory experience in the appropriate discipline as shown on the Experience Record.

The Authorising/Assessment Manager will undertake change of authorisation and subsequent re-authorisation.

A6.5 Authorisation Management

Authorising/Assessment Manager must be advised of Authorised Staff either joining or leaving the Employing organisation.

Employing organisation procedures must ensure that only Authorised staffs are allocated to Projects.

If an individual has not been granted an authorisation they are not permitted to operate in any of the roles defined in TP141.

On joining an Employing organisation, individuals who will be undertaking a role that requires authorisation must be made aware of this requirement.