1. SCOPE

This document indexes the specifications that are relevant to the application of protection systems to the Company Distribution and Transmission networks.

2. ISSUE RECORD

This is a controlled maintained document.

All copies printed via the Intranet or photocopied will be deemed uncontrolled.

Issue Date	Issue No	Author	Amendment Details
Feb 05	Issue 1	A Convery	Initial Issue

3. ISSUE AUTHORITY

Author	Owner	Issue Authority
Alan Convery Project Engineer	Alastair Graham Engineering Risk Control Section Head	Andrew Huthwaite Engineering & Transmission Operations Manager ……

4. REVIEW

This document will be subject to review as and when required.

5. CONTENTS

6. INTRODUCTION

This document is a second level specification in a three-tier structure, dealing with the protection requirements of the Company 33,132,275 and 400kV network. Each successive level in the structure provides greater detail in a specific discipline and, collectively, these documents define the Company technical requirements for plant, equipment and apparatus for use on, and for direct connection to, its electricity transmission/distribution system.

These documents translate the actual operating characteristics of the Company electricity transmission system into standardised values that assure safe & reliable operation. As far as possible, ratings and requirements are selected from values given in the appropriate IEC standards. Deviations from these standards relate to particular requirements of company network configurations or operational & safety procedures.

In order to facilitate the three-tier structure outlined above whilst at the same time utilising existing documents, the relevant Company documents are listed below alongside their NGTS equivalents. Where appropriate, any relevant ENA document is also listed. Where no Company document yet exists, reference is made to the appropriate NGTS.

7. DEFINITIONS

For the purposes of the SPTS suite of documents, the terms used are as defined in IEC 60050 (International Electrotechnical Vocabulary), and as below:

Company
Refers to SP Transmission Ltd, SP Distribution Ltd, and SP Manweb plc including all associated design and planning practices.

PowerSystems
SP PowerSystems Ltd, operator of network on behalf of the company.

SP Transmission
The distribution Licence Holder for the Transmission service area formally known as ScottishPower.

SPTS
Scottish Power Technical Specification.

NGTS
National Grid Technical Specification

8. SPECIFICATIONS

8.1 Level Two Documents

Table 1 below gives the direct equivalent Company documents to NGTS 2.6: Protection. Note that the appropriate Company document is voltage-dependant.

Subject	NGTS Document	Equivalent SPPS Document to be used	ENA Document
Protection	NGTS 2.6	PROT-01-006 (33kV) PROT-01-007 (132kV) PROT-01-008 (400/275 kV)	ENATS 48-5

Table 1: Level Two Equivalents

8.2 Level Three Documents

Table 2 below gives the SPPS equivalents to the relevant NGC Level Three documents including the NGTS 3.6.X suite as well as others.

Subject	NGTS Documents	Equivalent SPPS Documents to be Used	ENA Documents
Unit Feeder Main Protection	NGTS 3.6.1	PROT-16-002	ENATS 48-6-2
Protection for Auto-transformers	NGTS 3.6.2	PROT-16-007	ENATS 48-3
Busbar Protection	NGTS 3.6.3	PROT-16-004	ENATS 48-6-4
Non-Unit Feeder Main Protection	NGTS 3.6.4	PROT-16-001	ENATS 48-6-1
Intertripping and Protection Signalling Systems	NGTS 3.6.5	PROT-16-009	-
Protection for Static VAR Compensators	NGTS 3.6.6	Not required	-
Back-up protection	NGTS 3.6.7	PROT-16-006	-
Circuit Breaker Fail Protection	NGTS 3.6.8	PROT-16-005	-
Cross Site	NGTS 3.6.9	PROT-01-009	-

Communication Links for Teleprotection			
Power Line Carrier Coupling Equipment	NGTS 3.6.10	Use NGTS 3.6.10 where required	-
Communications for Teleprotection	NGTS 3.6.11	Currently use NGTS 3.6.11. SPPS document to be issued	-
Fault Recorders	NGTS 3.6.12	PROT-16-010	-
Circuit Breaker Trip Circuit Supervision Systems	NGTS 3.6.13	PROT-01-006 PROT-01-007 PROT-01-008	ENAER S15
Copperwork protection	NGTS 3.6.14	PROT-16-007	
Trip Relays and Trip Relay Resetting	NGTS 3.6.15	PROT-16-008 PROT-01-006 PROT-01-007 PROT-01-008	EATS-48-4
Protection for Double-Wound Transformer	NGTS 3.6.16	PROT-16-003	ENATS 48-6-3
Protection for Quadrature Boosters	NGTS 3.6.17	Use NGTS 3.6.17 when required	-
Protection for Shunt Reactors	NGTS 3.6.18	PROT-16-007	-
Protection for Series Reactors	NGTS 3.6.19	PROT-16-007	-
Protection for Bus Sections and Bus Couplers	NGTS 3.6.20	PROT-01-006	-
Protection for 32kV MSCs	NGTS 3.6.21	Not required.	-
Protection for Transformer Tertiary or LV Connections to Static Compensation Plant	NGTS 3.6.22	PROT-01-007	-
Protection for 400kV and 275kV MSCs	NGTS 3.6.23	Not required	-
Ancillary light current Equipment	NGTS 2.19	Use ENATS 50-18	ENATS 50-18
Protection Application	TPS 2.6.1	PROT-01- 006	-

Policy		PROT-01-007 PROT-01-008	
Protection and Control setting policy	TPS 2.6.2	PROT-01-009	-
Automatic Switching Application And Setting Policy	TPS 2.7.1	PROT-01-006 PROT-01-007 PROT-01-008 PROT-01-009	-
Automatic Switching Requirements	NGTS 2.15	PROT-01- 006 PROT-01-007 PROT-01-008	-
Delayed Automatic Reclosure and Plant Isolation	NGTS 3.15.1	PROT-16-012 to be issued	-
Ferroresonance Switching	NGTS 3.15.2	use NGTS 3.15.2 when required	-
Synchronising and Voltage Selection	NGTS 3.7.7	TPS 6/10,003	-

Table 2 – Equivalent Level 3 Documents