

RELEVANT ELECTRICAL STANDARDS - Amendments Record

Title	RES Issue 1 -Section Ref.	RES Issue 2 - Reference.	Source Document	Summary of Changes and Reasons
Introduction	Part 1	Part 1	.....	Minor Editorial changes
Administration	Part 2	Part 2	.....	Minor Editorial changes
User Policy	Part 3	Part 3	.....	Renamed - General Requirements
Type Registration	Part 3 -Section 1	Part 3	.....	1. Renamed - Technical Compliance. 2. Reference to NGET Type Registration process removed
Management of Rise of Earth Potential at New and Refurbished Towers	Part 3 -Section 2	PS(T)045 (RES) Issue 1	PS(T) 045	1. RES Issue 1, Part 3, Section 2 replaced by PS(T)045. 2. RES Issue 1, reference standards updated. 3. Term - Rise of Earth Potential changed to Earth Potential Rise (EPR) to align with reference standard.
Back-Up Protection Grading across NGET's and other Network Operator Interfaces	Part 3 -Section 3	PS(T)044 (RES) Issue 1	PS(T) 044	Minor Editorial changes
Ratings and General Requirements for Plant, Equipment, Apparatus and Services for the National Grid System and Connections Points to it.	Part 4 -Section 1	TS 1 (RES) Issue 1	NGTS 1	1. RES Issue 1, Part 4, Section 1 replaced by TS 1.0 (RES) Issue 1. 2. RES Issue 1 clauses deleted: 3. Clause 4.3.2, Table 1 and Notes; 4.3.3 all paras deleted + Tables 2&3 - replaced by TS 1.0(RES). 4. Clauses 1.3.1 and 1.3.2; RES Issue 1, Section 4.4, Table 4 - Tertiary values deleted and clause added re rated insulation and protective gap settings; RES Issue 1. 5. Clause 4.4.3, Table 6 - 66kV value added to table. RES Issue 1. 6. Clause 4.4.4, Table 7 - 66kV values added to table. RES Issue 1, Clause 4.5.1, Table 8 - 66kV values added to table. RES Issue 1. 7. Clause 4.5.2, Tables 9&10 deleted - replaced by TS1.0 (RES), Tables 3&4. 8. RES Issue 1, Sections 4.6, 4.7 and 4.8 deleted - replaced by new sections 4 and 5 in TS1.0(RES). 9. Reference Section updated.
Substations	Part 4 -Section 2	TS 2.01 (RES) Issue 1	NGTS 2.1	1. RES Issue 1, Part 4, Section 2 replaced by TS 2.01 (RES) Issue 1. 2. Document reformatted and renumbered to align with IEC 61936-1, Power Installations Exceeding 1kV – Common Rules. 3. Res Issue 1, Clauses replaced by TS 2.1 (RES) clauses as follows: 4. Clause 5.1 by 1.0, 5. Clause 5.3 by 7.1- Para 1, 6. Clause 5.4 by 7.1-Para 2 7. Clause 5.5 by 7.1 - Para 3, 8. Clause 5.6 by 7.101, 9. Clause 5.7 by, 10. Clause 5.8 by 7.1 Para 9, 11. Clause 5.9 by 6.2.41, 12. Clause 5.10 removed, 5.11 included in 7.101, 13. Clause 5.12 by 14. Clause 5.13 by 8.8. 15. Clauses 5.14 , 5.15, 5.16 by 9.0. 16. Clause 5.18 by 7.. 17. Clause 5.21 by 5.3, 18. Clause 5.21.2 by 5.10, 19. Clause 5.21.3 by 7.2.3. 20. Clause 5.21.4 by 7.2.4. 21. Clause 5.21.5 by 5.102. 22. Clause 5.21.6 by 7.1.1 to include standard bay diagrams. 23. Clause 5.21.7 by 6.21. 24. Clause 5.21.8 by 6.2.10. 25. Reference Standards updated.
Switchgear	Part 4 -Section 3	TS 2.02 (RES) Issue 1	NGTS 2.2	1. RES Issue 1, Part 4, Section 3 replaced by TS 2.02 (RES) Issue 1. 2. Scope extended to 66kV systems and reference to 13kV systems removed. 3. RES Issue 1: - 4. Clause 6.2.1, Paras 2-4 deleted 5. Clause 6.2.2, Paras 2-4 deleted 6. Clause 6.2.3, Para 1-3 & 6 deleted 7. Clause 6.2.4 deleted 8. Clause 6.3.1, Paras 1&2 deleted 9. Clause 6.3.2 - minor editorial changes 10. Clause 6.4.1- minor editorial changes 11. Clause 6.4.2 Paras 2 sub clause a) and b) deleted 12. Clause 6.4.3 deleted. 13. Reference Standards updated.

Earthing Requirements	Part 4 -Section 4	TS 3.01.02 (RES) Issue 1	NGTS 3.1.2	<p>1. RES Issue 1, Part 4, Section 3 replaced by TS 3.01.02 (RES).</p> <p>2. RES Issue 1, Clause 7.2.2, Table 15 amended to include additional surface requirements for 75mm chippings and subsections a) to g) deleted - Table 16 & 17 - threshold limit voltage for Railways changed to 645 to align with reference british standard - Par 7 second sentence deleted - Para 9 reworded to include Malz module.</p> <p>3. RES issue 1, Clause 7.2.3, Para 2, second sentence deleted because not in current standard - Para 6 expanded to include additional requirements.</p> <p>4. RES Issue 1, clause 7.2.5 dimension changed from 25mm to 50mm.</p> <p>5. RES Issue 1, Clause 7.2.6, Para 1 dimension changed from 25mm to 50mm plus additional sentence re test points.</p> <p>6. RES Issue 1, clause 7.2.8 para graph added re requirements for trench laid conductors - Para 6, added reqts for location of joints - Para 8, clause replaced by clause 1.8.6 of TS 3.02.01 (RES) and new section on security added.</p> <p>7. RES Issue 1, clause 7.2.9 Table 18 ratings revised.</p> <p>8. RES Issue 1, clause 7.2.11, clauses added</p>
Substation Auxiliary Supplies	Part 4 -Section 5	TS 2.12 (RES) Issue 1	NGTS 2.12	<p>1. RES Issue 1, Part 4, Section 5 replaced by TS 2.12 (RES) Issue 1.</p> <p>2. RES issue 1, Clause 8.2.2, Para 1 replaced.</p>
Ancillary Light Current Equipment	Part 4 -Section 6	TS 2.19 (RES) Issue 1	NGTS 2.19	<p>1. RES Issue 1, Part 4, Section 6 replaced by TS 2.19 (RES) Issue 1.</p> <p>2. RES Issue 1, Clause 9.2, Para 13 removed - not considered relevant to User.</p> <p>3. Clause 9.2.3 amended to remove indicator colour requirement.</p> <p>4. Clause 9.2.4 Paras 2,6,8 removed - Para 5 second sentence removed Para 6 Second sentence removed.</p> <p>5. Clause 9.2.7 requirements for fibre optic installation added.</p> <p>6. Clause 9.2.8 Para 2 replaced, Para 5 & 7 removed.</p> <p>7. Clause 9.2.9 Para 5 replaced, Para 6 removed.</p> <p>8. Clause 9.2.10 new clauses added and Para 2 removed.</p> <p>9. Clause 9.2.11 Para 2 replaced and new clauses added.</p> <p>10. Clause 9.2.12 new clause added.</p> <p>11. Clause 9.2.13 removed and replaced with reference to TS 3.24.15 (RES) and additional clause 1.13.4 re Forced Trip.</p> <p>12. Section 9.3, Additional paras - re pilot cables & In/Out sw Relays for protection & auto reclose.</p> <p>13. Section 9.4 - added clause 3.1.1 of TS 2.19 (RES) re cap discharge duty test.</p> <p>14. Reference Standards section updated.</p>
Substation Interlocking Schemes	Part 4 -Section 7	TS 3.01.01 (RES) Issue 1	NGTS 3.1.1	<p>1. RES Issue 1, Part 4, Section 7 replaced by TS 3.01.01 (RES) Issue 1.</p> <p>2. Minor editorial changes.</p>
Synchronising	Part 4 -Section 8	TS 3.24.60 (RES) Issue 1	TS 3.24.60	<p>RES Issue 1, Part 4, Section 8 replaced by TS 3.24.60 (RES) Issue 1.</p> <p>1. RES Issue 1, Section 8, Clause 11.2 – Definitions moved to Section 7 of TS 3.24.60(RES).</p> <p>2. RES Issue 1, Clause 11.3.2, “63.5V” removed.</p> <p>3. RES Issue 1, Clause 11.3.3, Para,2 amended.</p> <p>4. RES Issue 1, Clause 11.3.4, Para 9, word “C.B” added.</p> <p>5. RES Issue 1, Clause 11.3.7 – Informative deleted.</p> <p>6. RES Issue 1, Clause Tables 23 & 24 – replaced by Table 1&2 of TS 2.24.60(RES)</p>
Circuit-Breakers	Part 4 -Section 9	TS 3.02.01 (RES) Issue 1	NGTS 3.2.1	<p>1. RES Issue 1, Part 4, Section 9 replaced by TS 3.02.01 (RES) Issue 1.</p> <p>2. RES Issue 1 – changes: -</p> <p>3. Purpose & Scope, minor editorial changes;</p> <p>4. Clause 12.2.1 Informative and Paras 9-10 deleted;</p> <p>5. Clause 12.2.2 Paras 3, 9-10, 12 deleted, Para16 second sentence deleted;</p> <p>6. Clause 12.2.3 Para 3 revised, Paras 5, 7, 10-12 deleted, Para 13 first & last sentence deleted, Para 16 deleted;</p> <p>7. Clauses 12.2.4 and 12.2.5 deleted. Section 12.3, minor editorial changes and Paras 1-3 deleted,</p> <p>8. Clause 2.1.2 added to TS 3.02.01(RES),</p> <p>9. Clause 12.3.1 deleted,</p> <p>10. Clause 12.4.2, Para 6, 10-11 and Table deleted;</p> <p>11. Clause 12.4.3 Para 2 deleted;</p> <p>12. Clause 12.4.4 Paras 2-4 deleted;</p> <p>13. Section 12.5 Definition added to TS 3.02.01(RES) for Special Purpose circuit breakers. Reference Standards updated.</p>

Disconnectors and Earthing Switches	Part 4 -Section 10	TS 3.02.02 (RES) Issue 1	NGTS 3.2.2	<ol style="list-style-type: none"> 1. RES Issue 1, Part 4, Section 10 replaced by TS 3.02.02 (RES) Issue 1. 2. RES Issue 1, Clause 13.1 - scope extended to equipment rated at 72.5kV. 3. RES Issue 1, Clause 13.2.2 Heading word change "Frame" to "Support". 4. RES Issue 1, Clauses 13.3.10 & 13.3.11 - requirements applicable only to NGET equipment - clauses removed. 5. RES Issue 1, Clause 13.5 - Test Requirements - sub paragraphs a) to f) specific to NGET equipment only - paragraphs removed. Reference Standards section updated.
Current Transformers for Protection and General Use on the 132 kV, 275 kV and 400 kV Systems	Part 4 -Section 11	TS 3.02.04 (RES) Issue 1	NGTS 3.2.4	<ul style="list-style-type: none"> • RES Issue 1, Part 4, Section 11 replaced by TS 3.02.04 (RES) Issue 1. • RES Issue 1, Clause 14.2.1 - Paras 1, 3, 5, 10, 11, 12, 13 removed. • RES Issue 1, Clause 14.2.2 removed. • RES Issue 1, Clause 14.4.3.c test level for PX A removed. • RES Issue 1, Clause 14.4.3 d removed. • RES Issue 1, Clause 14.4.4 removed. Above clauses not considered relevant to User. • RES Issue 1, Clause 14.8 removed - requirements incorporated into IEC 61869-2. • TS 3.02.04 (RES) Issue 1, Clauses 9.3.5 and 9.4 - additional requirements inserted. • Reference Standards section updated.
Bushings	Part 4 -Section 12	TS 3.02.07 (RES) Issue 1	NGTS 3.2.7	<ol style="list-style-type: none"> 1. RES Issue 1, Part 4, Section 12 replaced by TS 3.02.07 (RES). 2. RES Issue 1 - Clause 15.2, Paras 3 to 6 removed. 3. RES Issue 1 - Clause 15.6, Paras 2 to 4 removed - not considered relevant to User. 4. Reference Standards section updated.
Solid Core Post Insulators for Substations	Part 4 -Section 13	TS 3.02.09 (RES) Issue 1	NGTS 3.2.9	<ol style="list-style-type: none"> 1. RES Issue 1, Part 4, Section 13 replaced by TS 3.02.09 (RES). 2. RES Issue 1 - Clause 16.3.3 and 16.3.8 - additional requirement added. 3. RES Issue 1, Section 13 replaced by TS 3.02.09 (RES). 4. Reference Standards section updated.
Busbar Protection	Part 4 -Section 14	TS 3.24.34 (RES) Issue 1	NGTS 3.24.34	<p>RES Issue 1, Part 4, Section 14 replaced by TS 3.24.34 (RES).</p> <ol style="list-style-type: none"> 1. (RES) Issue 1 - Clause 17.2 - references updated. 2. (RES) Issue 1 - Clause 17.3.7 "A local in/out switching facility" removed. 3. (RES) Issue 1 - Clause 17.3.10 informative interface section removed, not applicable to BCA. 4. (RES) issue 1 - Clause 17.3.11 - Man machine interface section removed , not applicable to BCA,
Circuit Breaker Fail Protection	Part 4 -Section 15	TS 3.24.39 (RES) Issue 1	NGTS 3.24.39	<ol style="list-style-type: none"> 1. RES Issue 1, Part 4, Section 15 replaced by TS 3.24.39 (RES). 2. RES Issue 1 - Scope - Reference to 275 and 400 kV substations removed, could also apply to lower voltage systems. 3. RES Issue 1 - Clause 18.3.1 - Reference to 400/275 kV substations removed, could apply to lower voltage systems. 4. RES Issue 1 - clause 18.3.2 C (v) clause changed to informative. 5. RES Issue 1 - clause 18.3.3 IEC 255-3 updated to IEC 61810-1 and 5 amp added to informative text. 6. RES Issue 1 - Clause 18.3.4 IEC 255-1-00 reference updated to IEC 60255-151.
Environmental and Test Requirements for Electronic Equipment	Part 4 -Section 16	TS 3.24.15 (RES) Issue 1	NGTS 3.24.15	<p>RES Issue 1, Part 4, Section 16 replaced by TS 3.24.15 (RES)1.</p> <p>Clause 19.7.4 - 19.7.6, 19.7.9 - 19.7.10, Clause 19.7.15, Clause 19.8.19 - 19.8.21 have been removed.</p> <ol style="list-style-type: none"> 2. In Clause 19.6.4, Clause 19.6.8, Clause 19.7.12, Clause 19.7.16, Clause 19.8, Clause 19.8.2, Clause 19.8.7, Clause 19.8.9, Clause 19.8.10, Clause 19.8.15, Clause 19.8.18, some sentences have been removed. 3. Clause 19.7.11: Delete the "Routine and Sampling Testing" and "Site Pre-commissioning Testing" in the first Informative. 4. Clause 19.7.16: Bullet a) to d) has been removed. 5. Clause 19.8.1: some sentences have been changed to a normal sentence from "Informative". 6. Clause 19.8.11 and Clause 19.8.12: some normal sentences have been changed to "Informative". 7. Clause 19.9.10: Bullets b) and c) has been removed. 8. General: The BS EN standards are preferred. For IEC standards, if similar BS EN standards are available, remove these IEC standards and the BS EN standards are listed. If some standards have been withdrawn and they will superseded by other standards if available. 9. General: re-wording for some sentences such

Gas Insulated Switchgear	Part 4 -Section 17	TS 3.02.14 (RES) Issue 1	TS 3.2.14	<p>1. RES Issue 1, Part 4, Section 17 replaced by TS 3.02.14 Issue 1.</p> <p>2. RES Issue 1 Clause 20.2.1 modified to recognise different gas zone types and industry best practice based on reliability statistics.</p> <p>3. RES Issue 1 Clauses 20.2.2, 20.2.3, 20.2.4 and 20.2.5 removed due to change in scope of the RES.</p> <p>4. RES Issue 1 Clause 20.2.6 modified due to change in scope of the RES and to introduce level of robustness in gas alarm schemes.</p> <p>5. RES Issue 1 Clauses 20.2.7, 20.2.8, 20.2.9, 20.2.10, 20.2.11 and 20.3.1 removed due to change in scope of the RES.</p> <p>6. RES Issue 1 Clauses 20.3.5, 20.3.6 and 20.4.1 removed due to change in scope of the RES. RES Issue 1 Clause 20.5.1 modified to encompass all voltages and define which test procedure to use.</p>
System Monitor - Dynamic System Monitoring (DSM)	.....	TS 3.24.70 (RES) Issue 1	TS 3.24.70	New Document
Ancillary Services Business Monitoring	.....	TS 3.24.95 (RES) Issue 1	TS 3.24.95	New Document
Protection & Control for HVDC Systems	.....	TS 3.24.90 (RES) Issue 1	TS 3.24.90	New Document
Guidance Notes	Part 5	-	-	Removed. Replaced by separate RES versions of NGET Technical Guidance Notes - see below.
Type Registration	Section 1	-	-	Removed - not applicable to Users equipment.
Working in Proximity to Live Conductors - Reducing the Risks	Section 2	TGN(E)186 (RES)	TGN(E)186	New Document
Conductor Jointing in Substations	Section 3	TGN(E)187 (RES)	TGN(E)187	New Document