

ANNEXURE B: SIG Schedule of Specifications and Returnables

YARD OPTIMISATION: SIGNALLING AND YARD AUTOMATION SYSTEMS

	SPECIFICATION NUMBER	DESCRIPTION
		NATIONAL AND INTERNATIONAL STANDARDS
1	SANS 1200A	Section A: General
2	SANS 1200AB	Section AB: Engineer's Office
3	SANS 1921-1	Part 1: General Engineering and Construction Works
4	SANS 1921-6	Part 6: HIV/Aids awareness
5	SANS 1200C	Site Clearance
6	SANS 1200DA	Earthworks (small works)
7	SANS 1200DB	Earthworks (pipe trenches)
8	SANS 1200G	Concrete (structural)
9	SANS 1200GB	Concrete (ordinary buildings)
10	SANS 1200GE	Pre-cast concrete (structural)
11	SANS 1200LB	Bedding (pipes)
12	SANS 1200LC	Cable ducts
13	SANS 558	Boxes and manhole and inspection covers and frames
14	SANS 791	uPVC pipes for underground non-pressure application
15	NRS 048-2	Electrical supply – Quality of supply Part 2
16	SANS 50091	Uninterruptible power systems (UPS) – Parts 1 & 2
17	SANS 10142-01	Wiring of premises Low voltage Installation
18	SANS 10313	Protection against lightning
19	SANS 1063	Earth rods and couplers
20	SANS 1195	Busbars
21	SANS 1213	Mechanical cable glands
22	SANS 1239	Plugs, socket-outlets and couplers for industrial purposes
23	SANS 1411-1	Materials of insulated electric cables and flexible cords – Part 1: conductors
24	SANS 1433-1	Electrical terminals and connectors – Part 1: Terminal blocks having screw and screwless terminals
25	SANS 1433-2	Electrical terminals and connectors – Part 2: Flat push-on connectors
26	SANS 156	Moulded case circuit breakers
27	SANS 1619	Small power distribution units (ready boards)
28	SANS 1765	Low Voltage switchgear and control gear assemblies (distribution boards) with a rated-short circuit withstand strength up to and including 10kA
29	SANS 1777	Photoelectric control units for lighting (PECU's)
30	SANS 1799	Watt-hour meters – AC electronic meters for active energy
31	SANS 50054-5	Fire detection and fire alarm systems Part 5: Heat detectors – Point detectors
32	SANS 50054-7	Fire detection and fire alarm systems Part 7: Smoke detectors – Point detectors using scattered light, transmitted light or ionisation
33	SANS 529	Heat resisting wiring cables
34	SANS 60269-1	Low-voltage fuses – Part 1: General requirements
35	SANS 60309-1	Plugs, Socket-outlets and couplers for industrial purposes (Part 1: General requirements)
36	SANS 60331	Tests for electric cables under fire conditions
37	SANS 780	Distribution transformers
38	IEC 60870-2-2	Telecontrol equipment and systems - Part 2: Operating conditions - Section 2: Environmental conditions (climatic, mechanical and other non-electrical influences)
39	IEC 60870-5-102	Telecontrol equipment and systems - Part 5: Transmission protocols - Section 102: Companion standard for the transmission of integrated totals in electric power systems
40	IEC 60870-5-2	Telecontrol equipment and systems - Part 5: Transmission protocols - Section 2: Link transmission procedures
41	IEC 60870-5-6	Telecontrol equipment and systems - Part 5-6: Guidelines for conformance testing for the IEC 60870-5 companion standards
42	IEC 60870-6-501	Telecontrol equipment and systems - Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations - Section 501: TASE.1 Service definitions
43	IEC 60870-6-502	Telecontrol equipment and systems - Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations - Section 502: TASE.1 Protocol definitions
44	IEC 62236-4	Railway applications - Electromagnetic compatibility - Part 4: Emission and immunity of the signalling and telecommunications apparatus
45	IEC 62279	Railway applications - Communications, signalling and processing systems – Software for railway control and protection systems
46	IEC 62280-1	Railway applications - Communication, signalling and processing systems - Part 1: Safety-related communication in closed transmission systems
47	IEC 62280-2	Railway applications - Communication, signalling and processing systems - Part 2: Safety-related communication in open transmission systems
48	IEC 62425	Railway applications - Communication, signalling and processing systems – Safety related electronic systems for signalling
49	IEC 62498-3	Railway applications - Environmental conditions for equipment - Part 3: Equipment for signalling and telecommunications

	SPECIFICATION NUMBER	DESCRIPTION
50	IEC/TR 60870-1-3	Telecontrol equipment and systems - Part 1: General considerations - Section 3: Glossary
51	IEC/TR 60870-6-505-a	Amendment 1 - Telecontrol equipment and systems - Part 6-505: Telecontrol protocols compatible with ISO standards and ITU-T recommendations - Tase.2 User guide
52	SANS 10400-XA	The application of the National Building Regulations (Part X: Environmental sustainability Part XA: Energy usage in buildings)
53	SANS 204	Energy efficiency in buildings
54	SANS 204-1	Energy efficiency in buildings Part 1: General requirements
55	SANS 204-2	Energy efficiency in buildings Part 2: The application of the energy efficiency requirements for buildings with natural environmental control
56	SANS 204-3	Energy efficiency in buildings Part 3: The application of the energy efficiency requirements for buildings with artificial ventilation or air conditioning
57	SANS 50001	Energy management systems - Requirements with guidance for use
58	SANS 50285	Energy efficiency of electric lamps for household use - Measurement methods
59	SANS 941	Energy efficiency of electrical and electronic apparatus
60	SANS 1574-2	Electric flexible cables with solid extruded dielectric insulation Part 2: PVC insulated flexible cables for domestic, office and similar environments (cords)
61	SANS 16818	Building environment design - Energy efficiency – Terminology
62	SANS 1760	Land mobile communication equipment - Technical characteristics and additional requirements of environmental tests
63	SANS 23045	Building environment design - Guidelines to assess energy efficiency of new buildings
64	SANS 300132-2	Environmental Engineering (EE); Power supply interface at the input to telecommunications equipment Part 2: Operated by direct current (dc)
65	SANS 300132-3	Environmental Engineering (EE); Power supply interface at the input to telecommunications equipment Part 3: Operated by rectified current source, alternating current source or direct current source up to 400 V
66	SANS 60793-1-5	Optical fibres Part 1: Generic specification Section 5: Measuring methods for environmental characteristics
67	SANS 61000-2-2	Electromagnetic compatibility (EMC) Part 2-2: Environment - Compatibility levels for low frequency conducted disturbances and signalling in public low-voltage power supply systems
68	SANS 61000-2-3	Electromagnetic compatibility (EMC) Part 2: Environment Section 3: Description of the environment - Radiated and non-network-frequency-related conducted phenomena
69	SANS 61000-6-5	Electromagnetic compatibility (EMC) Part 6-5: Generic standards - Immunity for power station and substation environments
70	SANS 61753-2-1	Fibre optic interconnecting devices and passive components performance standard Part 2-1: Fibre optic connectors terminated on single-mode fibre for category U – Uncontrolled environment
71	SANS 7816-13	Identification cards - Integrated circuit cards Part 13: Commands for application management in a multi-application environment

	SPECIFICATION NUMBER	DESCRIPTION
		TFR APPLICABLE STANDARDS
72	E7/2	Specification for works on-, over-, under- or adjacent to railway lines and near high voltage apparatus.
73	S406	Specification for the supply of stone
74	S420	Specification for concrete work
75	BBB3235	Installation of Earthing and Lightning Protection of Electronic Measurement Equipment Housing
76	BBC1040	Installation of Earthing and Lightning Protection of Signal relay rooms and Signal Equipment Enclosures
77	BBD7842	Provisioning of GSM services on the Transnet coal line
78	BBF1082	Secure Equipment Room
79	SCFA-33	Digital Transmission Flexible Multiplexers
80	SPC-00015	Main Specification For The Supply, 4-Channel v.24 Fibre Multiplexer Interface Transmission Equipment
81	SPC-00029	Trenching Laying Hauling in of Communication Cables
82	SPC-00031	Immunization of telecoms
83	SPC-00571	Single-mode Optical Fibre
84	SPC-00573	Optical Fibre Cable make-up for Underground and Aerial Installation
85	SPC-00575	Erection of self-supporting Optical Fibre Cable on Traction masts
86	SPC-00583	Optical Fibre Accessories
87	SPC-00587	Specification for Horizontal Directional Drilling for Underground Telecommunication Cable Systems
88	SPC-00589	Civil Engineering Works Associated Construction Underground Telecom Plant
89	SPC-01279	Erection of Wooden Telephone Poles Support of Optical Fibre Cables
90	TPPE-SIG-0001	Optic Fibre Equipment Specification for Ermelo-Majuba
91	TPPE-SIG-0002	Brackets for Cable Suspension Ermelo-Majuba
92	TPPE-SIG-0003	Data pack for Telecontrol of Traction Substations
93	BBB-0002	Information Required on Interlocking Units
94	BBB0041	Preparation of Drawings for TFR Infrastructure
95	BBB0042	Practice and Conventions regarding Document Identification (Technical Documents)
96	BBB0320	Control Panel and Illuminated Diagram Standards for Multi-section Axle Counters
97	BBB0321	Numbering of Multi-section Axle Counter heads, track sections and FMs
98	BBB1454	Non-Illuminated Train Control Diagrams
99	BBB1875	Required Operational Capability for Axle Counter Systems
100	BBB2952	Technology Implementation Plan for Traffic Control Systems as in 2003
101	BBB3609	Procedure for Testing, Commissioning and handing over
102	BBB4107	Optic Fibre Equipment
103	BBB4210	Asset Lifecycle Management
104	BBB4354	Preparation of Signalling Drawings
105	BBB4628	Required Operational Capability for TFR Points Machines
106	BBC0227	CS90 Configuration Manual
107	BBC0228	CS90 CTC VDU Manual
108	BBC0281	Required Operational Capability for Interlockings
109	BBC1594	Documentation Required for External Party Projects
110	BBC0653	The Development of an Outstation Communications Unit for the Spoornet Telecontrol System
111	BBC5666	3-phase Static UPS: 10 to 125kVA
112	BBC6525	Technical and Functional Specification for Yard Points Control System
113	BBD6208	Approval: SL35 Long Life Lamp - part no. 614870843
114	BBD6211	Provisional Approval - 60V Earth Leakage Detector - WYELD001 60
115	BBF3705	Low-voltage power supply devices, d.c. 12v output, for use in railway signalling applications
116	BBF3857	Low-Voltage Power Supply Devices, D.C. 24v Output, For Use In Railway Signalling Applications
117	BBF3858	Low-voltage power supply devices, d.c. 48v output, for use in railway signalling applications
118	BBF3861	Low-Voltage Power Supply Devices, Ac Input, 60v Output, For Use In Railway Signalling Applications
119	BBF3862	Low-Voltage Power Supply Devices, Ac To Dc Converter With 110v Output, For Use In Railway Signalling Applications
120	CSE51	Printed Circuit Boards For Electronic And Power Equipment
121	CEE-PA-0041 AMD 6	Transmission Lines on DC Traction Masts
122	CSE-1133-051 Cat.N72	Manufacturing and ordering of points rodding
123	CSE-1133-052 Cat C98	The Treatment and Coating of Signal Equipment in Corrosive and Non-corrosive Areas
124	CSE-1133-100 Cat E98	Compilation Of Rules For The Guidance Of Technical Staff
125	CSE-1133-103 Cat E98	Replacing Effen Fuses with Trip Switches
126	CSE-1133-105 Cat. N98	The Use of Cables in Signalling Installations
127	CSE-1133-108 Cat. N98	Serial Numbers on PC Boards
128	CSE-1154-001 Cat. E48	Environmental Specification for Transnet Railway Signalling Systems
129	CSE-1155-500 Cat. N48	Testing of Signalling Installations
130	CSE-1158-001 Cat. E98	General Requirements for Non-vital Electronic Hardware
131	CSE-1158-004 Cat. A48	Signal Number Plates
132	CSE-1159-001 Cat. X48	Documentation for Signals Equipment
133	CSE-1162-013 Cat. X47	Rail mounted points lock
134	CSE-1162-015 Cat. X47	Crankhandle Box
135	CSE-1163-009 Cat. X47	Isolating Transformer Signalling Power Applications
136	CSE-1163-013 Cat. X47	Stationary Enclosed Lead Acid Batteries
137	CSE-1163-014 Cat. E42	Signalling Relay Room Power Supply
138	CSE-1163-017 Cat. X47	Electric Siren

	SPECIFICATION NUMBER	DESCRIPTION
139	CSE-1164-001 Cat. X47	PVC Insulated Metal Protected Outdoor Cables
140	CSE-1164-002 Cat. X47	PVC Insulated Multi-core Indoor Cables
141	CSE-1164-003 Cat. X47	PVC Insulated Flame Retardant Indoor Cables
142	CSE-1164-005 Cat. X47	PVC Insulated Single Core Indoor Cables
143	CSE-1164-006 Cat. X47	Stranded, Bare Copper or PVC Insulated, Outdoor or Indoor Cable for Earth Connections
144	CSE-1164-007 Cat. X47	PVC Insulated Unarmoured Cab Tyre Cable
145	CSE-1164-008 Cat. X47	Stranded, Galvanized Steel, PVC Insulated, Outdoor Cable for Track Jumpering
146	CSE-1173-013 Cat. E42	Centralised Traffic Control System Office Board
147	CSE-1173-014 Cat. E42	Signalling Remote Control System (Office-based)
148	CSE-1173-025 Cat. X47	Train Time Recording system, VDU Based
149	CSE-1173-033 Cat. X47	Specification for an Automatic Train Routing System
150	CSE-1174-003 Cat. E42	Interlocking
151	CSE-1174-004 Cat. E42	Acquisition Specification for Shunt and Siding Keys
152	CSE-1174-005 Cat. E42	Colour-light Signal Light Unit
153	CSE-1174-006 Cat. E42	Route Signal Light Unit
154	CSE-1174-010 Cat. D42	Axle Counter Systems
155	CSE-11NA-090	Installation of the CS90 system
156	CSE-45D	Static Inverter
157	CSE-45E	Automatic Rectified/Battery Charger
158	CSE-501/2	Installation of AC Points Machines
159	CSE-503B	Installation of Signals
160	CSE-504/7	Outdoor Signalling Works
161	CSE-505/1	Power Supplies and Distribution
162	CSE-507/3	Installation of Axle Counters
163	CSE-511/1	Installation of Block Control Equipment
164	CSE-514/5	Manufacture of Concrete Components
165	CSE-516/1	Trenching and Outdoor Cable Installation – Addendum depth of trench and slabs
166	CSE-517/2	Immunisation of Colour-light Signalling in AC electrified areas
167	CSE-W-194 Cat. N98	CS90 Installation Documentation
168	CSE-Z148 series	Signalling Standards
169	CSE-Z148-29F	Points Detection
170	CSE-Z148-33F Sht1 to Sht3	Proving of Signalling Relays
171	CSE-Z148-46F	Lightning Protection
172	SCLK-3	Specification for Printed Circuit Boards
173	SCLM4	Specification for Sockets for Integrated Circuits
174	BBC5665	Single Phase Static Uninterruptible power Supply 3 to 10 KVA
175	CAS0002	Building of a 6 m Steel Isolated Container
176	PRC-00106	Post-Installation Tests for Optic Fibre Cable
177	PRC-00107	Pre-Test Quality of Optic Fibre Cable on Drums
178	BBC1776	Procedures for GPRS Users in Transnet Freight Rail
179	BBC0659	Guidelines for using GPRS Communication in Transnet Freight Rail
180	BBB1812	Dragging Equipment Detector System
181	BBG0919	Rail Mount Equipment for a Dragging Equipment Detector System
182	BBF7820	Power Distribution Cubicles for Signal Installations
183	CIR/OD/0362	Proposed Working of Private Siding NO. 742074 Majuba Power Station
ESKOM APPLICABLE STANDARDS		
184	240-55410927	Cyber Security Standard for Operational Technology
185	240-56227443	Requirements for Control and Power Cables for Power Station Standards
SUPPLEMENTARY INFORMATION: ENGINEERING INSTRUCTIONS		
186	BBD8210	E7/1 - Specification For General Work And Works On, Over, Under Or Adjacent To Railway Lines And Near High Voltage Equipment
187	BBB0322	TFR Document Request Form