PASSENGER

SPECIFICATION FOR WORKS ON, OVER, UNDER OR ADJECENT TO RILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT (SPK 7/1)



ISSUED BY : The Executive Manager

SPK7/1

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prasa PASSENGER
PASSENGER RAIL AGENCY OF SOUTH AFRICA

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PASSENGER RAIL

SPK7/1

SPECIFICATION FOR WORKS ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT

(This specification shall be used in SA Rail Commuter Corporation contracts)

SPK7/1

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1 DEFINITIONS

The following definitions shall apply:

Authorised Person: A person whether an employee of Transnet or not, who has been specially authorised to undertake specific duties in terms of Spoornet's publication ELECTRICAL SAFETY INSTRUCTIONS, and who holds a certificate or letter of authority to that effect.

Barrier: Any device designed to restrict access to and prevent inadvertent contact with exposed "live" high-voltage electrical equipment.

Bond: A short conductor installed to provide electrical continuity.

Responsible Representative: The responsible person in charge, appointed by a contractor, who has undergone specific training (and holds a certificate) to supervise staff under his control to work on, over, under or adjacent to railway lines and in the vicinity of high-voltage electrical equipment.

Contractor: Any person or organisation appointed by PRASA to carry out work on its behalf.

Dead: Isolated and earthed.

Electrical Officer (Contracts): The person appointed in writing by the responsible Electrical Engineer in Transnet or PRASA'S maintenance Contractor as the person who shall be consulted by the Contractor in all electrical matters to ensure that adequate safety precautions are taken by the Contractor.

Engineer: The person, firm or company appointed by PRASA to act as Engineer for the purposes of the contract and designated as such in the Special Conditions of Contract, or any other Engineer appointed from time to time by PRASA and notified in writing to the Contractor.

Executive Officer: The person appointed by PRASA from time to time as the Executive Officer to act according to the rights and powers held by and obligations placed upon him in terms of the Contract.

High-Voltage: A voltage normally exceeding 1 000 volts.

Live: A conductor is said to be "live" when it is at a potential different from that of the earth or any other conductor of the system of which it forms a part.

Near: To be in such a position that a person's body or the tools he is using or any equipment he is handling may come within 3 metres of live exposed high-voltage electrical equipment.

Occupation: An authorisation granted by Transnet or PRASA'S maintenance and/or operating Contractor for work to be carried out under specified conditions on, over under or adjacent to railway lines.

Occupation Between Trains: An occupation during an interval between successive trains.

Project Manager: The person or juristic person appointed by PRASA from time to time as the Project Manager, to administer the Contract according to the powers and rights held by and obligations placed upon him in terms of the Contract.

Total Occupation: An occupation for a period when trains are not to traverse the section of line covered by the occupation.

Work on: Work undertaken on or so close to the equipment that the specified working clearances to the live equipment cannot be maintained.

Work Permit: A combined written application and authority to proceed with work on or near dead electrical equipment.

PART A - GENERAL SPECIFICATION

2. AUTHORITY OF OFFICERS OF TRANSNET OR PRASA'S MAINTENANCE AND/OR OPERATING CONTRACTOR

2.1 The Contractor shall co-operate with the authorised personnel of Transnet or PRASA'S maintenance and/or operating Contractor and shall comply with all instructions issued and restrictions imposed with respect to the Works which bear on the presence and operation of Transnet or PRASA'S railway lines and high-voltage equipment.

2.2 Without limiting the generality of the provisions of 2.1, any duly authorised representative of Transnet or PRASA, having identified himself, may stop the work if, in his opinion, the safe passage of trains or the safety of Transnet or PRASA assets or any person is affected. **CONSIDERATIONS OF SAFETY SHALL TAKE PRECEDENCE OVER ALL OTHER CONSIDERATIONS**.

3. **CONTRACTOR'S REPRESENTATIVES**

3.1 The Contractor shall nominate Responsible Representatives of whom at least one shall be available at any hour for call-out in cases of emergency. The Contractor shall provide the Engineer with the names, addresses and telephone numbers of the representatives.

3.2 The Contractor guarantees that he has satisfied himself that the Responsible Representative is fully conversant with this specification and that he shall comply with all his obligations in respect thereof.

3.3 The Responsible Representative shall be familiar with the contents and provisions of the ELECTRICAL SAFETY INSTRUCTIONS, copies of which they shall keep in their possession for the duration of the contract.

4. **OCCUPATIONS AND WORK PERMITS**

4.1 Work to be done during total occupation or during an occupation between trains or under a work permit shall be done in a manner decided by the Engineer and at times to suit the requirements of Transnet or PRASA'S maintenance and/or operating Contractor.

4.2 The Contractor shall organise the Works in a manner, which will minimise the number and duration of occupations and work permits required.

4.3 PRASA shall not be liable for any financial or other loss suffered by the Contractor arising from his failure to complete any work scheduled during the period of an occupation or work permit.

4.4 The Contractor shall submit to the Engineer, in writing, requests for occupations or work permits together with details of the work to be undertaken, at least 21 days before they are required. Transnet or PRASA'S maintenance and/or operating Contractor does not undertake to grant an occupation or work permit for any particular date, time or duration.

4.5 Transnet or PRASA'S maintenance and/or operating Contractor reserves the right to cancel any occupation or work permit at any time before or during the period of occupation or work permit. If, due to cancellation or change in date or time, the Contractor is not permitted to start work under conditions of total occupation or work permit at the time arranged, all costs caused by the cancellation shall be born by the Contractor except as provided for in clauses 4.6 to 4.8 above.

4.6 When the Contractor is notified less than 2 hours before the scheduled starting time that the occupation or work permit is cancelled, he may claim reimbursement of his direct financial losses caused by the loss of working time up to the time his labour and plant are employed on other work, but not exceeding the period of the cancelled occupation or work permit.

4.7 When the Contractor is notified less than 2 hours before the scheduled starting time, or during an occupation or work permit, that the duration of the occupation or work permit is reduced, he may claim reimbursement of his direct financial losses caused by the loss of working time due to the reduced duration of the occupation or work permit, but not exceeding the balance of the reduced occupation or work permit.

4.8 Reimbursement of the Contractor for any loss of working time in terms of 4.6 and 4.7, shall be subject to his claims being submitted within 14 days of the event with full details of labour and plant involved, and provided that the Engineer certifies that no other work on which the labour and plant could be employed was immediately available.

4.9 Before starting any work for which an occupation has been arranged, the Contractor shall obtain from the Engineer written confirmation of the date, time and duration of the occupation including the specified conditions applicable.

4.10 Before starting any work for which a work permit has been arranged, the Responsible Representative shall read and sign portion C of Annexure 8.1 of the ELECTRICAL SAFETY INSTRUCTIONS, presented by an authorised person, signifying that he is aware of the limits within which work may be undertaken. After the work for which the permit was granted has been completed, or when the work permit is due to be terminated, or if the permit is cancelled after the start, the same person who signed portion C shall sign portion D of Annexure 8.1 of the ELECTRICAL SAFETY INSTRUCTIONS, thereby acknowledging that he is aware that the electrical equipment is to be made "live". The Responsible Representative shall advise all his workmen accordingly.

5. SPEED RESTRICTIONS AND PROTECTION

5.1 When speed restrictions are imposed by Transnet or PRASA'S maintenance and/or operating Contractor because of the Contractor's activities, the Contractor shall organise and carry out his work so as to permit the removal of the restrictions as soon as possible.

5.2 When the Engineer considers protection to be necessary the Contractor shall, provide all protection including flagmen, other personnel and all equipment for the protection of Transnet or PRASA's personnel and assets, the public and including trains. The Contractor shall arrange training and Transnet accreditation of the Contractor's flagmen and other personnel performing protection duties. The cost of the training shall be to the Contractor's account. It remains the responsibility of the Contractor to protect his personnel and assets at all times.

5.3 The Contractor shall consult with the Engineer, whenever he considers that protection will be necessary, taking into account the minimum permissible clearances set out in Transnet's publication, PERMANENT WAY INSTRUCTIONS.

5.4 The Contractor shall appoint a Responsible Representative to receive and transmit any instruction, which may be given by Transnet or PRASA'S maintenance and/or operating Contractor personnel providing protection.

6. ROADS ON TRANSNET OR PRASA PROPERTY

6.1 The Contractor shall use every reasonable means to prevent damage to any of the roads or bridges communicating with or on the direct route to the site and shall select routes, use vehicles, and restrict loads so that any extraordinary traffic as may arise from the moving of plant or material to or from the site shall be limited as far as reasonably possible.

6.2 The Contractor shall not occupy or interfere in any way with the free use of any public or private road, right-of-way, path or street unless the Engineer has obtained the approval of the road authority concerned.

7. **CLEARANCES**

7.1 No temporary works shall encroach on the appropriate minimum clearances set out in Transnet's publications, PERMANENT WAY INSTRUCTIONS and ELECTRICAL SAFETY INSTRUCTIONS.

8. **STACKING OF MATERIAL**

8.1 The Contractor shall not stack any material closer than 3 metres from the centre line of any railway line or within 2.5 metres of the boundary fence without prior approval of the Engineer and considering the presence of any trackside equipment.

8.2 All stacking of material shall take place in accordance with the Occupational Health and Safety Act No. 85 of 1993, and Regulations and Instructions, and the ELECTRICAL SAFETY INSTRUCTIONS.

9. **EXCAVATION, SHORING, DEWATERING AND DRAINAGE**

9.1 Unless otherwise approved by the Engineer any excavation adjacent to a railway line shall not encroach on the hatched area shown in Figure 1.

Formation level

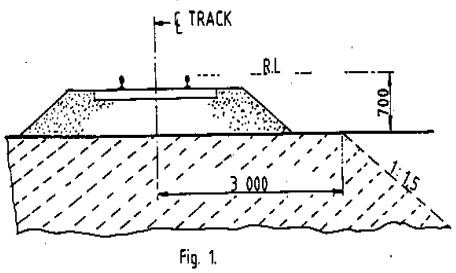

Fig. 1.

9.2 The Contractor shall provide at his own cost any shoring, dewatering or drainage of any excavation unless otherwise stipulated elsewhere in the Contract.

9.3 Where required by the Engineer, drawings of shoring for any excavation under or adjacent to a railway line shall be submitted and permission to proceed obtained, before the excavation is commenced.

9.4 The Contractor shall prevent ingress of water to the excavation but where water does enter, he shall dispose of it as directed by the Engineer.

9.5 The Contractor shall not block, obstruct or damage any existing drains either above or below ground level unless he has made adequate prior arrangements to deal with drainage.

10. **FALSEWORK FOR STRUCTURES**

10.1 Drawings of falsework for the construction of any structure over, under or adjacent to any railway line shall be submitted to the Engineer and his permission to proceed obtained before the falsework is erected. Each drawing shall be given a title and a distinguishing number and shall be signed by a registered professional engineer certifying that he has checked the design of the falsework and that the drawings are correct and in accordance with the design.

10.2 After the falsework has been erected and before any load is applied, the Contractor shall submit to the Engineer a certificate signed by a registered professional engineer certifying that he has checked the falsework and that it has been erected in accordance with the drawings. Titles and numbers of the

drawings shall be stated in the certificate. Notwithstanding permission given by the Engineer to proceed, the Contractor shall be entirely responsible for the safety and adequacy of the falsework.

11. **PILING**

11.1 The Engineer will specify the conditions under which piles may be installed on Transnet or PRASA property.

12. **UNDERGROUND SERVICES**

12.1 No pegs or stakes shall be driven or any excavation made before the Contractor has established that there are no underground services, which may be damaged thereby.

12.2 Any damage shall be reported immediately to the Engineer, or to the personnel in charge at the nearest station, or to the traffic controller in the case of centralised traffic control.

12.3 Any previously uncharted underground services encountered by the Contractor during the course of his activities shall be reported immediately to the Engineer who shall ensure the necessary inclusion in the “as built” drawings.

13. **BLASTING**

13.1 No blasting in the vicinity of a railway line shall be carried out except with the prior written permission of the Engineer and under such conditions as he may impose.

13.2 The Contractor shall make arrangements for the supply, transport, storage and use of explosives.

13.3 The Contractor shall have labour, tools and plant, to the satisfaction of the Engineer, available on the site to clear immediately any stone or debris deposited on the track or formation by blasting, and to repair any damage to the track or formation immediately after blasting. Repairs to the track shall be carried out only under the supervision of a duly authorised representative of the PRASA’s maintenance and/or operating Contractor.

13.4 The Contractor shall advise the Engineer of his intention to blast at least 21 days prior to the commencement of any blasting operations.

13.5 Before any blasting is undertaken, the Contractor and the Engineer shall jointly examine and measure up any buildings, houses or structures in the vicinity of the proposed blasting to establish the extent of any cracking or damage that exists. The Contractor, at his own expense shall make good any deterioration of such buildings, houses, or structures, which, in the opinion of the Engineer, is a direct result of the blasting.

13.6 All claims shall be settled by the Contractor as soon as possible. Should unreasonable delays occur, the PRASA will have the right to settle any such claims and recover the costs from the Contractor.

13.7 Within a reasonable time after completion of the blasting, the Contractor shall obtain a written clearance from each land owner in the vicinity of the blasting operations to the effect that all claims for compensation in respect of damage caused by the blasting operations to their respective properties have been settled.

13.8 The Contractor shall provide proof that he has complied with the provisions of clauses 10.17.1 to 10.17.4 of the Explosives Regulations (Act 26 of 1956 as amended).

13.9 Blasting within 500 metres of a railway line will only be permitted during intervals between trains. A person appointed by the Engineer, assisted by flagmen with the necessary protective equipment, will be in communication with the controlling railway station. Only this person will be authorised to give the Contractor permission to blast, and the Contractor shall obey his instructions implicitly regarding the time during which blasting may take place.

13.10 The flagmen described in clause 13.9 above, where provided by Transnet or PRASA'S maintenance and/or operating Contractor, are for the protection of trains and Transnet or PRASA property and personnel only, and their presence does not relieve the Contractor in any manner of his responsibilities in terms of Explosives Act or Regulations, or any obligation in terms of this Contract.

13.11 The person described in clause 13.9 above will record in a book provided and retained by the Engineer the dates and times:

(i) when each request is made by him to the controlling station for permission to blast;

(ii) when blasting may take place;

(iii) when blasting actually takes place; and

(iv) when he advises the controlling station that the line is safe for the passage of trains.

13.12 Before each blast the Contractor shall record in the same book, the details of the blast to be carried out. The person appointed by the Engineer and the person who will do the blasting shall both sign the book whenever an entry described in clause 13.11 above is made.

13.13 The terms of clause 27 hereof shall be strictly adhered to.

14. RAIL TROLLEYS

14.1 The use of rail trolleys on a railway line will be permitted only if approved by the Engineer and under the conditions stipulated by him.

14.2 All costs in connection with such trolley working requested by the Contractor shall, unless otherwise agreed, be borne by the Contractor, including the costs of any train protection services required.

15. ANCILLARY TRACKSIDE EQUIPMENT AND FACILITIES.

15.1 Where signal track circuits are installed, the Contractor shall ensure that no material capable of conducting an electrical current makes contact between rails of a railway line/lines.

15.2 No signal connections on track-circuited tracks shall be severed without the Engineer's knowledge and consent.

15.3 No ancillary trackside equipment or facilities such as axle counters, bonds, wiring runs, connection boxes, points machines, signals, drainage systems etc. shall be disconnected, removed, altered or in any way interfered with without the Engineer's knowledge and consent.

16. **PENALTY FOR DELAYS TO TRAINS**

16.1 If any trains are delayed by the Contractor and the Engineer is satisfied that the delay was avoidable, a penalty will be imposed on the Contractor in terms of the Special Conditions of Contract.

17. **COMPLIANCE WITH STATUTES AND REGULATIONS**

17.1 The Contractor shall comply with the provisions of the following:

(i) the OHS Act 85 of 1993, as amended;
(ii) the Explosive Act 26 of 1956, as amended;
(iii) the Workmen's Compensation Act, 1941, as amended;
(iv) the Mines Health and Safety Act 29 of 1996, as amended;
(v) the ELECTRICAL SAFETY INSTRUCTIONS, as amended;

and all regulations framed under these acts.

17.2 The Contractor shall prepare and submit to the PRASA's maintenance and operating contractor for acceptance, a Safety Case clearly explaining his Safety Management System. A site access certificate will not be issued to the Contractor unless this Safety Case has been accepted.

17.3 The Contractor shall comply with the provisions of the OHS Act 85 of 1993, as amended. For the purpose of this Act, the site occupied by the Contractor is transferred, for the duration of the contract, to the control of the Contractor as if it were his property. Prior to commencement of any work, and following the acceptance of a Safety Case, a site access certificate shall be issued to the Contractor by the PRASA's maintenance and/or operating Contractor. As employer, the Contractor is in every respect responsible for compliance with the provisions of this Act.

17.4 Compliance with all applicable legislation shall be entirely at the Contractor's cost.

18. TEMPORARY LEVEL CROSSINGS

18.1 Applications for temporary level crossings shall be submitted by the Contractor in writing for approval to the PRASA's maintenance and/or operating Contractor. These applications shall include a plan and cross-sectional view of the site including all affected services and proposed temporary alterations thereto.

18.2 The PRASA's maintenance and/or operating Contractor may permit the construction of a temporary level crossing over the railway line at any approved site. The period for which the level crossing is permitted will be at the discretion of the PRASA's maintenance and/or operating Contractor.

18.3 The Contractor at his own cost, shall arrange the construction by a nominated specialist subcontractor of the entire approved temporary level crossing, including all level crossing signs and height gauges and alterations to communication, power and signal equipment as well as drainage.

The constructed temporary level crossing shall be subject to the inspection and approval of the PRASA's maintenance and/or operating Contractor. After the temporary level crossing has served its purpose, the Contractor, at its own cost, shall arrange its removal by a nominated specialist Contractor and return the infrastructure assets to normal to the approval of PRASA's maintenance and/or operating contractor.

18.4 The Contractor shall, at his own cost, take all necessary steps including the provision of gates, locks and, where necessary, watchmen to restrict the use of the level crossing to himself and his employees, his sub-contractors and their employees, the staff of the PRASA and its maintenance and/or operating Contractor and to such other persons as the PRASA may permit, of whose identity the Contractor will be advised.

If ordered by the PRASA's maintenance and/or operating Contractor, the Contractor shall, at his own cost, appoint persons to control road traffic using any temporary level crossing. Such persons shall stop all road traffic when any approaching train is within 750 m of the level crossing and shall not allow the road traffic to proceed over the level crossing until the lines are clear.

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PART B - ADDITIONAL SPECIFICATION FOR WORK NEAR HIGH-VOLTAGE ELECTRICAL EQUIPMENT

1 GENERAL

1.1 This specification is based on the contents of Spoornet's publication ELECTRICAL SAFETY INSTRUCTIONS, as amended, a copy of which will be made available on loan to the Contractor for the duration of the contract on request only. These instructions apply to all work near live high-voltage equipment maintained and/or operated by Transnet or PRASA'S maintenance contractor, and the onus rests on the Contractor to ensure that he obtains a copy.

1.2 The Contractor's attention is drawn in particular to the contents of Sections 1 and 2 of the publication ELECTRICAL SAFETY INSTRUCTIONS.

1.3 The publication ELECTRICAL SAFETY INSTRUCTIONS covers the minimum safety precautions which must be taken to ensure safe working on or near high-voltage electrical equipment, and must be observed at all times. Should additional safety measures be considered necessary because of peculiar local conditions, these may be ordered by and at the discretion of the Electrical Officer (Contracts).

1.4 This specification must be read in conjunction with and not in lieu of the publication ELECTRICAL SAFETY INSTRUCTIONS.

1.5 The Contractor shall obtain the approval of the Electrical Officer (Contracts) before any work is done which causes or could cause any portion of a person's body or the tools he is using or any equipment he is handling, to come within 3 metres of any live high-voltage equipment.

1.6 The Contractor shall regard all high-voltage equipment as live unless a work permit is in force.

1.7 Safety precautions taken or barriers erected shall comply with the requirements of the Electrical Officer (Contracts), and shall be approved by him before the work to be protected is undertaken by the Contractor. The Contractor shall, unless otherwise agreed, bear the cost of the provision of the barriers and other safety precautions required, including the attendance of Transnet or PRASA's maintenance contractor where this is necessary.

1.8 No barrier shall be removed unless authorised by the Electrical Officer (Contracts).

2. WORK ON BUILDINGS OR FIXED STRUCTURES

2.1 Before any work is carried out or measurements are taken on any part of a building, fixed structure or earthworks of any kind above ground level situated within 3 metres of live high voltage equipment, the Electrical Officer (Contracts) shall be consulted to ascertain the conditions under which the work may be carried out.

2.2 No barrier erected to comply with the requirements of the Electrical Officer (Contracts) shall be used as temporary staging or shuttering for any part of the Works.

2.3 The shuttering for bridge piers, abutments, retaining walls or parapets adjacent to or over any track may be permitted to serve as a barrier, provided that it extends at least 2,5 metres above any working level in the case of piers, abutments and retaining walls and 1,5 metres above any working level in the case of parapets.

3. WORK DONE ON OR OUTSIDE OF ROLLING STOCK, INCLUDING LOADING AND/OR UNLOADING

3.1 No person shall stand, climb or work whilst on any platform, surface or foothold higher than the normal unrestricted places of access, namely:-

(i) the floor level of trucks;
(ii) external walkways on diesel, steam and electric locomotives, steam heat vans, etc. and
(iii) walkways between coaches and locomotives.

When in these positions, no person may raise his hands or any equipment or material he is handling above his head.

3.2 In cases where the Contractor operates his own rail mounted equipment, he shall arrange for the walkways on this plant to be inspected by the Electrical Officer (Contracts) and approved, before commencement of work.

3.3 The handling of long lengths of material such as metal pipes, reinforcing bars, etc. should be avoided, but if essential they shall be handled as nearly as possible in a horizontal position below head height.

3.4 The Responsible Representative shall warn all persons under his control of the danger of being near live high-voltage equipment, and shall ensure that the warning is fully understood.

3.5 Where the conditions in clauses 3.1 to 3.3 above cannot be observed the Electrical Officer (Contracts), shall be notified. He will arrange for suitable safety measures to be taken. The Electrical Officer (Contracts), may in his discretion and in appropriate circumstances, arrange for a suitable employee of the Contractor to be specially trained by the relevant authority at the Contractor's costs, as an Authorised Person to work closer than 3 metres from live overhead conductors and under such conditions as may be imposed by the responsible Electrical Engineer in Transnet or PRASA'S maintenance contractor.

4. USE OF EQUIPMENT

4.1 MEASURING TAPES AND DEVICES.

4.1.1 Measuring tapes may be used near live high-voltage equipment provided that no part of any tape or a person's body comes within 3 metres of the live equipment.

4.1.2 In windy conditions the distance shall be increased to ensure that if the tape should fall it will not be blown nearer than 3 metres from the live high-voltage equipment.

4.1.3 Special measuring devices longer than 2 metres such as survey staves and rods may be used if these are of non-conducting material and approved by the senior responsible Electrical Engineer in Transnet or PRASA'S maintenance contractor, but these devices must not be used within 3 metres of live high-voltage equipment in rainy or wet conditions.

4.1.4 The assistance of the Electrical Officer (Contracts) shall be requested when measurements within the limits defined in clauses 4.1.1 to 4.1.3 above are required.

4.2 PORTABLE LADDERS.

4.2.1 Any type of portable ladder longer than 2 metres may only be used near live high-voltage equipment under the direct supervision of the Responsible Representative. He shall ensure that the ladder is always used in such a manner that the distance from the base of the ladder to any live high-voltage equipment is greater than the fully extended length of the ladder plus 3 metres. Where these conditions cannot be observed, the Electrical Officer (Contracts) shall be advised, and he will arrange for suitable safety measures to be taken.

4.3 WORKS FROM INSULATED VEHICLES AND TRESTLE TROLLEYS.

4.3.1 Where specially constructed insulated vehicles or trestle trolleys are available for use, authorised persons, category A, or a person issued with a letter of authority (clause 303.0 of the ELECTRICAL SAFETY INSTRUCTIONS) may be permitted to work from the top of such vehicles under "live" overhead track equipment **.**

5. CARRYING AND HANDLING MATERIAL AND EQUIPMENT

5.1 Pipes, scaffolding, iron sheets, reinforcing bars and other material, which exceeds 2 metres in length, shall be carried completely below head height near live high-voltage equipment. For maximum safety such material should be carried by two or more persons so as to maintain it as nearly as possible in a horizontal position. The utmost care must be taken to ensure that no part of the material comes within 3 metres of any live high-voltage equipment.

5.2 Long lengths of wire or cable shall never be run out in conditions where a part of a wire or cable can come within 3 metres of any live high-voltage equipment unless the Electrical Officer (Contracts) has been advised and has approved appropriate safety precautions.

5.3 The presence of overhead power lines shall always be considered, especially when communications lines or cables or aerial cables, stay wires, etc. are being erected above ground level.

6. PRECAUTIONS TO BE TAKEN WHEN ERECTING OR REMOVING POLES, ANTENNAE, TREES ETC.

6.1 A pole may be handled for the purpose of erection or removal near high-voltage equipment under the following conditions:

(i) If the distance between the point at which the pole is to be erected or removed and the nearest live high-voltage equipment is more than the length of the pole plus 3 metres, the work shall be supervised by the Responsible Representative.

(ii) If the distance described in (i) is less than the length of the pole plus 3 metres, the Electrical Officer (Contracts) shall be consulted to arrange for an Authorised Person to supervise the work and to ensure that the pole is earthed where possible. The pole shall be kept in contact with the point of erection, and adequate precautions shall be taken to prevent contact with live high-voltage equipment.

6.2 The cost of supervision by an Authorised Person and the provision of earthing shall, unless otherwise agreed, be borne by the Contractor.

6.3 The provisions of clauses 6.1 and 6.2 above shall also apply to the erection or removal of columns, antennae, trees, posts, etc.

7. USE OF WATER

7.1 No water shall be used in the form of a jet if it can make contact with any live high-voltage equipment or with any person working on such equipment.

8. USE OF CONSTRUCTION PLANT

8.1 "Construction plant" entails all types of plant including cranes, piling frames, boring machines, excavators, draglines, dewatering equipment and road vehicles with or without lifting equipment.

8.2 When work is being undertaken in such a position that it is possible for construction plant or its load to come within 3 metres of live high-voltage equipment, the Electrical Officer (Contracts) shall be consulted. He will arrange for an Authorised Person to supervise the work and to ensure that the plant is adequately earthed. The Electrical Officer (Contracts) will decide whether further safety measures are necessary.

8.3 The cost of any supervision by an Authorised Person and the provision of earthing shall, unless otherwise agreed, be borne by the Contractor.

8.4 When loads are handled by cranes, non-metallic rope hand lines shall be used, affixed to such loads so as to prevent their swinging and coming within 3 metres of live high-voltage equipment.

8.5 Clauses 8.1 to 8.4 above shall apply mutatis mutandis to the use of maintenance machines of any nature.

9. WORK PERFORMED UNDER DEAD CONDITIONS UNDER COVER OF A WORK PERMIT

9.1 If the Responsible Representative finds that the work cannot be done in safety with the high voltage electrical equipment live, he shall consult the Electrical Officer (Contracts) who will decide on the action to be taken.

9.2 If a work permit is issued the Responsible Representative shall:

(i) before commencement of work ensure that the limits within which work may be carried out have been explained to him by the Authorised Person who issued the permit to him, and that he fully understands these limits.

(ii) sign portion C of the permit before commencement of work;

(iii) explain to all persons under his control the limits within which work may be carried out, and ensure that they fully understand these limits;

(iv) care for the safety of all persons under his control whilst work is in progress; and

(v) withdraw all personnel under his control from the equipment on completion of the work before he signs portion D of the work permit.

10. TRACTION RETURN CIRCUITS IN RAILS

10.1 DANGEROUS CONDITIONS CAN BE CREATED BY REMOVING OR SEVERING ANY BOND.

10.2 Broken rails with an air gap between the ends, and joints, at which fishplates are removed under "broken bond" conditions, are potentially lethal. The rails on either side of an air gap between rail ends on electrified lines shall not be touched simultaneously until rendered safe by an Authorised Person.

10.3 The Contractor shall not break any permanent bonds between rails or between rails and any structure. He shall give the Engineer at least 21 days written notice when removal of such bonds is necessary.

10.4 No work on the track, which involves interference with the traction return rail circuit, either by cutting or removing the rails, or by removal of bonds shall be done unless the Electrical Officer (Contracts) is consulted. He will take such precautions as may be necessary to ensure continuity of the return circuit before permitting the work to be commenced.

11. BLASTING

11.1 The Contractor shall obtain the permission of the Electrical Officer (Contracts) before blasting, and shall give at least 21 days notice of his intention to blast. The Electrical Officer (Contracts) shall then decide whether it is necessary to have an Authorised Person in attendance during such operations.

11.2 The terms of clause 13 of SPK7/1 Part A or clause 15 of the SPK7/2 Part A, as applicable, shall be strictly adhered to.

12. HIGH-VOLTAGE ELECTRICAL EQUIPMENT NOT MAINTAINED AND/OR OPERATED BY TRANSNET OR PRASA'S MAINTENANCE CONTRACTOR

Where the work is undertaken on or near high-voltage electrical equipment which is not maintained and/or operated by Transnet or PRASA'S maintenance contractor, the Occupational Health and Safety Act No. 85 of 1993, and Regulations and Instructions, and/or the Mines Health and Safety Act (Act 29 of 1996), shall apply.

Such equipment includes:

(i) Equipment of Electricity Suppliers**;**

(ii) the Contractor's own power supplies;

(iii) Equipment being installed by, but not yet taken over from the Contractor, and

(iii) Electrified Private Siding equipment.

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