

SOUTH EAST CENTRAL RAILWAY

PCE's CIRCULAR No: 16 (Revised)

Sub: Safety Precautions at work site : Works executed in proximity of running lines & works executed on running lines.

Preamble:

A number of Engineering, S&T and Electrical works in connection with gauge conversion, doubling, third line, railway electrification, RVNL, and traffic facilities are progressing on various divisions which require excavation/digging, movement of vehicles/equipment near the running tracks. While carrying out these works in the vicinity of running tracks, there is a possibility of disturbance to track geometry, damage to Electrical/S&T cables and infringement of moving dimensions which may result into unusuals resulting into dislocation of traffic accidents. Also a number of Track renewal works and Bridge works are being executed in running track.

In SECR PCE Circular No: 16 on "Safety Precautions at work site in proximity of running lines" was issued on 16.06.2006. With the change in guidelines of Railway Board, revised guidelines are being issued through this circular so that the instances of disturbance of track geometry, infringement of moving dimensions and damage to the electrical/S&T Cables, which may result into accidents or any other unusual can be avoided.

PART A - Undertaking any type of works adjacent/adjoining to the running tracks:

(Works executed by construction organization & other project organizations like IRCON, RITES, RVNL, CERL etc.)

1.0 Measures to be ensured prior to start of the work:

- 1.1 Before undertaking any work adjoining the running track, Engineer Incharge of the construction organization or other project organization (as the case may be) should submit the following details in writing to the Open Line officials SSE/JE (P.Way), ADEN, Sectional Sr.DEN:
 - 1.1.1 Nature of work, location and Name of the executing agency.
 - 1.1.2 Approximate duration of work.
 - 1.1.3 The list of type of vehicles and approx. number of vehicles to be deployed.
 - 1.1.4 Details of drivers along with their ID
 - 1.1.5 Details of location where vehicles are likely to work.
 - 1.1.6 Certification regarding:
 - i. Availability of Railways Supervisor and Competent authorized supervisor of the contractor.
 - ii. Training to supervisor/driver (staff) of contractor and Competency certificate issued as given in IRPWM para 819 (4) Annexure 8/5, by Assistant Engineer in charge of the site if required to be issued.
 - iii. Imposition of caution orders, OES, WF instruction etc. wherever required.
 - iv. Giving information to concerned departments supervisors i.e. Engg, Elect or S&T if required.
- 1.2 Assurance certificate by contractor and competency certificate issued by Assistant Engineer in charge of site as given in Annexure - 1.



- 1.3 The concerned Open line department supervisors (i.e. Engineering, S&T, TRD, etc.) shall be advised to depute their staff as and when required.
- 1.4 Survey of site by supervisor of contractor & Railway's Supervisor to assess the precautions to be taken at site for working of trains and materials required for protection. Detail planning of work including protection of track and safety measures proposed to be adopted should be listed out.
- 1.5 Draw and advise to Sectional ADEN/SSE(P.Way) & SSE(Works) about the detailed planning of work including protection of track and safety measures proposed to be adopted.
- 1.6 Information as indicated in item 1.1 to 1.4 shall be obtained from Contractor prior to the start of the work if the work is directly supervised by open line.
- 1.7 Sectional ADEN should know the names of supervisors of Construction organization/other organizations who are going to be site incharge/incharges of work site.
- 1.8 Check list given in Annexure II shall be used to ensure that all the requisite measures have been taken before start of the work.
- 2.0 Measures to be adopted during execution of work adjoining the track:**
- 2.1 Presence of competent Railway's and contractor's supervisors must be ensured at site. Contractor has deputed trained supervisors at work site duly certified by ADEN/Incharge of the work as per competency certificate stated in Annexure I.
- 2.2 The excavation is not causing any damage to formation or any type of settlement to the running track and obstruction to the drainage of the existing drains of track.
- 2.3 There is no infringement to the maximum moving dimensions for safe running of the trains.
- 2.4 In case of deployment of mass labour, (the caution order of Observe Engineering Hand Signals & whistle freely (OEHS & WF) shall be issued for the duration of work.
- 2.5 While executing the work protection of track should be ensured as per provisions of IRPWM.
- 2.6 A register shall be maintained at the site regarding "Safety Measure" being taken at site and all precaution being taken shall be logged. Inspecting officials shall check various safety measures being taken during their inspection and record the observations.
- 2.7 No part of existing bridge shall be touched without prior approval of CBE.
- 2.8 The cutting and protection scheme shall be approved by CBE office.
- 2.9 Proper look out man should be deployed while working on bridges, who will warn the workers with whistle. One man should also be deployed at nearby station for getting information of trains incoming to bridge site.
- 2.10 While digging in station area, if any cable is found, digging should be stopped and concerned signaling /electrical staff should be informed immediately. There should not be any damage to equipments & cables or any other installation.
- 2.11 Mobile phones or Walkie - Talkie sets where necessary should be provided at work sites.
- 2.12 While inspecting the worksite, check list given in Annexure III shall be used to ensure that all the requisite measures have been taken during the execution of the work
- 2.13 Speed restriction should be relaxed only by the open line sectional Supervisor.

- 3.0 Measures to be adopted for movement of vehicles adjoining the track:**
- 3.1 The engineer Incharge of the work will personally examine and certify the road vehicle/ equipments, counsel the driver, protection man and supervisor and will give written permission to Contractor giving number and type of road vehicle, driver and supervisor to be deployed on the location, period and timing of the work. The contractor shall not be allowed to work at site without prior written permission from Engineering Incharge.
- 3.2 Check list given in an Annexure-II shall be used to ensure that all the requisite measures have been taken before start of the work. Also, a copy of the check list duly signed shall be kept in the work contract file
- 3.3 Drivers of vehicle have been briefed about the safety and precautions to be taken while moving/working close to traffic.
- 3.4 In case, Contractor's Machines and vehicles has been planned to be executed beyond 6.0 mtrs from center line of the nearest running track, the adjacent land strip where road vehicle/machinery is to ply for the work shall be demarcated by 150 mm white line with lime in advance at distance of 6 mtrs from the center of existing track and acknowledge by the contractor so that vehicle/machinery do not cross this line and do not come closer than 6.0 mtrs of running track.
- 3.5 The worksite shall be suitably demarcated to keep public and passengers away from work area necessary signage board such as "Work in progress" etc., shall be provided at appropriate locations to warn the public/passengers.
- 3.6 In case movement of vehicle at less than 6m up to maximum 3.5m clear of the track is inescapable and it is of temporary nature (i.e. work duration is less than 24 hours), it should be permitted in presence of Railway Representative, not below the rank of J.E/P.Way/Works by the Engineer-in-charge who will be posted to ensure that:
- 3.6.1 Necessary precautions for protection of track have been taken and caution order issued to trains.
- 3.6.2 Look out man has been posted along the track at a distance of 800 m from the location of work with red flag and whistle to warn the road vehicles regarding approaching trains.
- 3.7 In case, work is planned to be done within 3.5 m of center line of running track, it shall be ensured that the work is done under block protection only and necessary safety precautions for protection to track as per Para No.: 806 and 807 of IRPWM are taken.
- 3.8 If duration of work is likely to extend for more than 24 hours then barricading as per the design given in Annexure IV shall be provided in full length of work area along the track at specified distances.
- 3.9 Contractor shall ply road vehicle only between Sunset and Sunrise. In case of emergency where it is necessary to work during night hours, sufficient lighting shall be ensured in the complete work area for the safety of public and passengers. Also additional staff shall be posted as necessary for night working.
- 3.10 Wherever provided the engineering indicator boards shall be lit during night hours as per the provisions of P.Way Manual.
- 3.11 In unusual circumstances, where operator apprehends infringement to track while working truck/machinery near running track, following action shall be taken:
- a) The contractor/supervisor/vehicle operator will immediately advice the situation to railway official and assist him in protecting the track.
- b) Protection shall be done as done for other emergencies.

- 3.12 Individual vehicle/machinery shall not be left unattended at site of work if it is unavoidable and becomes necessary to stable the road vehicle/machinery at plant near the running track, these shall be properly secured against any possible roll-off and always be manned even during non-working hours.
- 3.13 When a road vehicle is reversed, do ensure the following:
- The location where vehicle is to take a turn is properly demarcated.
 - The road vehicle driver should always face the railway track during the course of turning or reversing his vehicle.
 - Presence of an authorized railways representative is ensured at such location.

PART B - Precautions required to be taken during execution of work requiring Traffic Blocks:

- 4.1 Any work, which infringes the moving dimensions, shall be started only after the traffic block has been imposed and track is protected as per working schemes and provisions of IRPWM and G&SR.
- 4.2 Recording of "Assurance" at the time of closure of work for track fitness at given speed by Railway and contractors supervisor. For this an Assurance Register shall be maintained at each worksite each page of which should be pre numbered.
- 4.3 Adequate manpower with proper tools & equipment should be ensured for each site for achieving desired progress per day/week/month.
- 4.4 At Deep Screening/TSR location, proper ramping is required to be provided. Proper packing of sleepers at this location with correct track parameters at close of work is the key to safety. Railway and Agency supervisors must be sensitized about it. The location of curves requires special attention w.r.t Versines & Cross levels.
- 4.5 At locations where night working is unavoidable, proper lighting arrangement should be made.
- 4.6 Before closing the work, the track shall be left with the proper track geometry so that the trains run safely.
- 4.7 After completion of work, the released sleepers and fittings should be properly stacked away from the track to be kept clear of moving dimensions.
- 4.8 Block shall be removed only when all the temporary arrangement, machineries, tools, plant etc. have been kept clear of moving dimensions.
- 4.9 Restoration of normal speed over worksite should be ensured within stipulated number of days, with machine packing & adequate ballasting.

PART C - Safety Precautions to be taken for Bridge Works:

- 5.1 Sufficient number of wooden blocks should be available at site and stand by jack of required capacity & piston height should be invariably available.
- 5.2 In case of insertion of Relieving spans, continuous manning of the site should be done till removal of Relieving spans. A register should be kept for recording the observations like any settlement, cross level going out, alignment going out etc.
- 5.3 Bridge works should preferably be done in Day light hours only. At location where night working is unavoidable, proper lighting arrangement should be done.
- 5.4 If any staff feels dizziness due to height, he should not be deployed in height for bridge works.

- 5.5 For painting/other related work near OHE area, power block should invariably be taken and "permit to work" should be issued by authorized OHE staff.
- 5.6 For working in height, use of safety belts, safety helmets and other safety appurtenances must be ensured.
- 5.7 In case of alignment correction of bridge for ease of curve etc. SSE/OHE should also attend the block and align the OHE wire respectively in addition to SSE(P.Way).
- 5.8 In case of insertion of steel stool i.e. raising of rail level is involved, the work should be done in close co-ordination with SSE/P.Way. If raising of rail level is required more than permissible limit during the work, approach of track should be attended by CSM/ suitable tamping machine.
- 5.9 For scaffolding arrangement, rope and challies should properly be checked regarding strength. Weakened rope & challies should not be used.
- 5.10 For proper inspection of bridges, inspection ladder and platform should be provided in piers and abutments.
- 5.11 While working in blocks, the blocks should be removed only when all the machineries, tools, plants like gas cylinders, jacks, wooden blocks etc. have been kept clear of moving dimension.
- 5.12 While execution of foundation works, where excavation has been done, proper barricading, sign-board like "work in progress" should be done.
- 5.13 The contractor should not start any work without the presence of authorized Railway supervisor at site.
- 5.14 The look out and whistle caution orders shall be issued to the trains and speed restriction should be imposed where considered necessary. Suitable flagman/detonators shall be provided for protection of trains.
- 5.15 The bridge materials after unloading along the track should be kept clear off moving dimension and stacked as per the specified heights and distance from the running track.
- 5.16 Sand blasting work for metalizing of girder should be paused on coming of trains to protect the passengers from dust produced due to blasting.
- 5.17 No OHE work close to bridge shall be carried out without permission of railway representative.
- 5.18 Any Cable Laying, Pipe Laying on the Girder bridges should be done with prior approval of CBE's office.
- 5.19 A minimum distance of 2m has to be maintained between OHE wire and body part of worker or tools or metallic supports etc.
- 5.20 The earth bond provided with bridge structures should not be disturbed. If disturbed for any work, it should be reinstated when the work is completed by authorised staff only.
- 5.21 Launching of girder should be done as per approved launching scheme only.
- 5.22 If crane working is planned, the capacity of crane should be checked physically & firmness of the ground where crane will be placed should be checked. Working on newly filled ground should be avoided if proper rolling has not been done.
- 5.23 No part of existing bridge shall be touched without prior approval of CBE.
- 5.24 The cutting and protection scheme shall be approved by CBE office.
- 5.25 Proper look out man should be deployed while working on bridges, who will warn the workers with whistle. One man should also be deployed at nearby station for getting information of trains incoming to bridge site.

PART D - Additional precautions to be taken while working in or on top of Cutting:

- 6.1 Shifting of machine within Railway boundary should be carried out under Railway supervision and track protection/traffic block wherever required.
- 6.2 No movements of earth handling machine and tippers should be permitted once the track enters the block section and till the train passed the work site.
- 6.3 No loose boulders or steep slope having potential of slipping should be allowed to left before permitting the train to pass the work spot.

PART E - Stacking of Material along Railway Track:

- 7.1 The sites for material stacking shall be selected in advance ensuring that no part of the stacked material would infringe the Standard Moving Dimensions. A plan of proposed stacking locations be made and signed jointly by an authorized Railway's representative and contractor's representative.
- 7.2 The selected locations shall be marked by lime in advance.
- 7.3 Presence of an authorized railway's representative while unloading and stacking shall be ensured.
- 7.4 The material shall be stacked upto such a height, which will not cause infringement to SOD in case of accidental roll off.

PART F – Safety aspects to be observed while working in OHE area:

- 8.1 No electrical work close to running track shall be carried out without permission of railway representative.
- 8.2 A minimum distance of 2 m has to be maintained between live OHE wire and body part of worker or tools or metallic supports etc.
- 8.3 No electric connection etc. can be tapped from OHE.
- 8.4 Authorized OHE staff should invariably be present when the relaying work or any major work is carried out.
- 8.5 Power block is correctly taken and 'permit to work' is issued.
- 8.6 The structure bonds, track bonds, cross bonds, longitudinal rail bonds are not disturbed and if disconnected for the work, they are reconnected properly when the work is completed.
- 8.7 The track level is not raised beyond the permissible limit during the work.

Part G - General guidelines given by Railway Board for work sites:

- 9.1 Attempt should be to open less number of sites and progress work by pooling of resources.
- 9.2 Track renewal activities should be taken up using track machines only. Prior Board's approval should be taken for manual execution of track works if it is inescapable to resort to manual renewals.
- 9.3 A review of all worksites should be conducted periodically by inspections at minimum sectional DEN level for ensuring safety measures. Compromises found at worksite to be taken up severely with working agencies & supervisory staff. Conduct such review in next 7 days to cover all sites.



Note:-

- (i) For items of barricading, Sign Boards like "Work in Progress", Walkie-talkie sets, mobiles phones, look out man etc., suitable provision may be incorporated in the tender conditions as per site requirement.
- (ii) All other provisions of IRPWM and G&SR for safety at worksites shall be scrupulously followed.

This issues with the approval of PCE/SECR.

List of Annexures:

Annexure – I : Assurance Certificate.

Annexure – II :Check List (Before starting the work).

Annexure – III :Check List (While work is in progress).

Annexure – IV :Typical details of Barricading for safety at work site.

(Anuj Mittal)
Chief Track Engineer.

No: SECR/HQ/Engg./TC-IV/CE Circular/Vol-II/

Dt: 16.02.2023

Copy to:

1. Secy. to GM/SECR for kind information of GM.
2. Secy. to PCE/SECR for kind information of PCE.
3. CAO/Con for information and necessary action please.
4. DRM/BSP, R & NGP for information.
5. CSO/SECR: for information.
6. All HODs & Dy. HODs of Engg. Department for information.
7. Sr.DEN/Co/BSP, R & NGP for information and necessary action. The instructions shall be circulated upto field level with stringent follow up.

ASSURANCE CERTIFICATE

(Authority-RB letter no. 98/CE-II/PRA/32 Dtd. 23.05.2001)

Safe working of contractors: It is essential that adequate safety measures are taken for safety of the trains as well as the work force. The following measures shall invariably be adopted:

- (i) The contractor shall not start any work without the presence of railway supervisor at site.
- (ii) Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work shall be so carried out that there is no infringement to the Railway's schedule of dimensions. For this purpose, the area where road vehicles and/or machinery are required to ply, shall be demarcated and acknowledged by the contractor. Special care shall be taken for turning/reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions.
- (iii) The look out and whistle caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable flagmen/detonators shall be provided where necessary for protection of trains.
- (iv) The supervisor/workmen should be counseled about safety measures. A competency certificate to the contractor's supervisor as per proforma annexed shall be issued by ADEN, which will be valid only for the work for which it has been issued.
- (v) The unloaded ballast/rails/sleepers/other P.Way materials after unloading along track should be kept clear off moving dimensions and stacked as per the specified heights and distance from the running track.
- (vi) Supplementary site specific instructions, wherever considered necessary shall be issued by the Engineer in charge.

Certified that we have understood above instructions and will abide by all the safety provisions and instructions given by Engineer-in-charge or his representative from time to time.

Signature of the Contractor

COMPETENCY CERTIFICATE:

Certified that Shri _____ supervisor of M/s _____ has been examined regarding safe working at site on _____ work. His knowledge has been found satisfactory and he is capable of supervising the work safely.

Assistant Engineer

Annexure - II

CHECK LIST
(Before starting the work)

Name of Work: _____

Name and address of Contractor: _____

Location of work: _____

Duration of work: From _____ to _____

S. No.	Item	Yes	No
1.	Contractor's Supervisor identified/selected, who is going to be site incharge ?		
2.	Training imparted to contractor's Supervisor & Certificate issued.		
3.	Work site inspected by Construction's Supervisor/other department's supervisors along with Contractor's supervisor.		
4.	Precautions to be taken, identified and listed.		
5.	Plan of work drawn out by contractor's supervisor in Consultation with Railway's Supervisor.		
6.	Plan of work, brought to the knowledge of open line ADEN/SSE/Works & SSE/P.Way.		
7.	Before start of work, proper line marking/Barricading done at site of work.		
8.	Men deputed for protection of track along with safety equipments.		
9.	Caution order issued for the train drivers in case work is being done within 6 mtrs. of centre of running track.		
10.	Drivers of vehicles/machinery being used have been identified.		
11.	Drivers of vehicles/machinery briefed about the safe working.		
12.	Sufficient lighting provided at site of work for night working.		
13.	Infringements checked.		
14.	Sectional (Open Line) ADEN/SSE/P.Way/Works have satisfied themselves regarding safety arrangements.		
15.	Availability of Walkie- Talkie sets for communications.		

**Signature of Construction/
Other department's supervisor.**

**Signature of Open line
Supervisor.**

Date:

CHECK LIST
(While work is in progress)

Name of Work: _____

Name and address of Contractor: _____

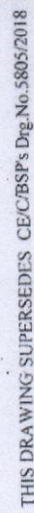
Location of work: _____

Duration of work: From _____ to _____

Date of inspection: _____

S. No.	Item	Yes	No
1.	Does the Contractor's Supervisor have the Competency certificate?		
2.	Does the knowledge of contractor's supervisor on safety of track & work site is upto the mark.		
3.	Is Railway's supervisor of Const. Organisation/Other department's available at site?		
4.	Is knowledge of Railway's supervisor O.K.		
5.	Is lime marking/Barricading done?		
6.	Are adequate safety precaution taken.		
7.	Are communication facility (Walkie - Talkie sets) available at site.		
8.	Are only identified drivers driving the vehicles/machinery?		
9.	Is whole work site safe for working of men/vehicles & trains?		
10.	Are adequate lighting arrangements done at site?		
11.	Are adequate protection equipment available at site.		
12.	Is caution order to trains being issued?		
13.	Are train drivers following the enforced temporary Speed restriction?		
14.	Has work permit been taken for working in Electrified territory/station yards (P&C areas)		

Signature of Inspecting Officer
Designation:



1. GRADE OF CONCRETE:- M-15
2. GRADE OF STEEL:- Fe-415/Fe-500

5. ARRANGEMENT FOR FIXING BARBED WIRE IS TO BE PROVIDED IN COLUMN.

Notes:-

NOTES:-

1. ALL DIMENSIONS ARE IN MM.
2. BARRICADING AT WORK SITES SHOULD BE PROVIDED AS FAR FROM CENTRE LINE OF TRACK AS POSSIBLE BUT, NOT LESS THAN 3.50m FROM CENTRE LINE OF TRACK. THIS SHOULD BE RETAINED UNTIL COMPLETION OF WORK.
3. WHEN THE BARRICADING IS PROVIDED PARALLEL TO TRACK AT >3.50m FROM CENTRE LINE, BARRICADING PERPENDICULAR TO THE TRACK ALSO NEED TO BE PROVIDED AT TERMINATING ENDS UP TO 3.50m FROM CENTRE LINE OF TRACK TO AVOID MOVEMENT OF ANY ROAD VEHICLE THROUGH BARRICADING AND THE TRACK.
4. RETROREFLECTIVE STRIP SHOULD BE PROVIDED SUITABLY ON THE POST (OPPOSITE TO TRACK/ FACING ROAD SIDE).

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