

Brief Description of Merry Go Round (MGR) System at IB Thermal Power Station of M/s OPGC Ltd:

Odisha Power Generation Corporation Ltd (OPGC Ltd), a 100 % Govt. of Odisha owned PSU has IB Thermal Power Station (ITPS) at Banharpali, Dist Jharsuguda , Odisha. ITPS has a comprehensive MGR private railway network for transporting coal from M/s Mahanadi Coalfields Ltd (MCL), Lakhanpur (A subsidiary of Coal India Ltd) mines to our siding at distance of 09 Km and from M/s OCPL , mines of Manoharpur at a distance of 47 Km. The MGR System is to transport coal from M/s MCL, Lakhanpur area for OPGC –I Units and from OCPL, Manoharpur for OPGC – II Units .

The Power Station has two generating stations of 2x 210 MW since the Year 1994 and uses fossil fuel (Coal) to meet its requirement of steam and also completed 2x660 MW Thermal Power Plant in July 2019. The present (2X210 MW) & (2 x 660 MW) Units uses about 30,000 MT of coal daily. The transportation of coal is facilitated through an elaborate Railway network called the Semi-Merry-Go-Round Railway System (SEMI -MGR) owned by the OPGC for M/s MCL siding and MGR system for M/s OCPL Siding.

Now, OPGC has 02 WDM2A (2600HP) LOCO, 02 WDG3A (3100HP) LOCO, 03 WDG4D LOCO (4500HP) ,147 BOBR coal hopper wagons, about 84 ETKM track and five RRI Signal station at 10 KM apart each from Chainage 0/000 Km to 47/283 Km for coal transportation.

The MGR System has about 84 ETKM of Broad-Gauge track. The Chharlla coal loading yard at Chainage9/300 KM is connected to MCL line for connection to Indian railway network at Chainage 14/800 KM and OCPL siding at 47/283 KM. The 84 ETKM of Broad Gauge (1676 mm) track consists of 60 Kg Rail & 60 points & crossings in loading (two loading yard and unloading yard) , single and SWR length railway track , associated accessories, S&T System (Route Relay Inter-locking Arrangement at five signal panel from Chainage 0 / 000 Km to 47/283 Km) & MGR Workshop / Loco maintenance Work shop.

At present, loaded coal wagons travel from Chharlla loading yard at Chainage 9/300 Km of M/s MCL and Manoharpur loading yard at 45/ 000 KM of M/s OCPL to the Power Plant and discharge the coal on the two track hoppers located at coal handling area inside Plant. The coal rake travels on a single track and takes a loop inside the Plant area from the Workshop panel building to enable the weighment of coal and discharge of coal on the hoppers. The entire movement of locomotives and wagons are controlled from five signal panel buildings through a Signaling and Telecommunications network.

SCOPE OF WORK

Name of the work: “AMC for maintenance of P-Way / Track, Bridge & Other Civil Miscellaneous work of MGR from ITPS to Gidhaghara Station for a Period of 02 (Two) Years”

DETAIL SCOPE OF WORK FOR TRACK MAINTENANCE OF MGR SYSTEM:

We have railway track in our private siding in the MGR system and the same has been categorized in two sections namely OPGC I and OPGC II track. The OPGC I track length of 13.3 ETKM as under and is constructed 24 years back and OPGC II track length of 39.308 ETKM constructed 04 years back .The details of ETKM in chainage are mentioned as under:

The detail of track length for OPGC I & II track are as under:

OPGC I: From Track hopper- I to 6 / 600 KM

SI no.	Detail of Chainage	Length in Track meter
1	MGR old track from hopper-I at Chainage 0/000 Km to 6 / 600 Km with Workshop Yard	13300

OPGC II: From Track Hopper- II via Chharlla Yard to Gidhaghara Station.

Sl. no	Detail of Chainage	Length in Track Meter
1	MGR new track laid by M/s L & T from Hopper II upto 6/600 Km	12584.60
2	From 6 / 600 Km to Chharlla siding i.e 9 / 800 Km	9899.00
3	Block section from Chharlla to Gidhaghara	13300.05
4	Main Line Gidhaghara Ch. 22800.05 to 24062.31	1262.26
5	Loop Line 1 Ch 22800.05 to 23800.05	1000.00
6	Loop Line 3 Ch 22800.05 to 24062.31	1262.26
	TOTAL	39308.17

The total track meter from ITPS to Gidhaghara for OPGC I & II is 52608.17 meter or 52.608 ETKM.

Scope of work and Technical Specification for AMC Maintenance of P-way / Track, Bridge & Other Civil Miscellaneous works of MGR from ITPS to Gidhaghara Station.

Scope of Work of P-way / Track Maintenance of OPGC I and II.	
SL no	Description of work
1	<p>Through packing of Broad Gauge Railway straight/curved track of any sleeper with stone ballast to maintain correct alignment, cross and longitudinal level as required for maintaining track gauge, versine. Super elevation etc on both straight and curve track with contractors tools and labors inclusive of all charges as per IRPWM and as directed by EIC on our MGR track line including hopper, loading yard & unloading yard. The scope of work shall be as per latest IRPWM manual where complete specification is not mentioned. The description mentioned against each item shall be as per instruction of EIC.</p> <p>1) THROUGH PACKING CONVENTIONAL MAINTENANCE: 'Through packing of Broad Gauge railway straight/curved track of any sleeper with stone ballast to maintain correct alignment, cross and longitudinal level as required for maintaining track gauge, versine, super-elevation etc with contractors tools and labors inclusive of all charges as per IRPWM and as directed by EIC on our MGR track line including hopper, loading yard & unloading yard.</p> <p>The packing shall consist of the following operations in sequence, not more of the track on any day being opened, and that can be efficiently repacked before closing of the work. Accordingly the total number of sleepers tackled will depend upon the number of gang men present on the day.</p> <p>Through packing shall consist of the following operations:</p> <ul style="list-style-type: none"> Opening of the road Examination of rail, sleepers and fastening Squaring of sleepers Slewing of track to correct alignment Gauging Packing of sleepers Repacking of joint sleepers Boxing of ballast section and tidying. <p>Through packing will be Done from one end towards the other continuously or as per EIC.</p>
2	<p>Slack packing of track as and when required with contractor tools and labors inclusive of all charges as per IRPWM manual.</p> <p>Slack packing: Slack packing of track as and when required with contractor's tools and labors inclusive of all charges as per IRPWM manual. Picking up slacks shall be round the year for any no. of items as required.</p> <p>As opposed to through packing, picking-up-slacks should be done where the alignment or top level is bad and the track has to be restored to normal condition quickly. The length of track attended by the gang during the day will depend on the extent of the slacks. In all cases sighting is done, the defects assessed and accordingly identifying marks are made on sleepers in chalk. The marked on sleepers should then be opened out and dealt with as in the case of through-packing.</p> <p>It is imperative when joints are picked up, minimum three sleepers in addition to the two joint sleepers on either side of the joint should be packed. While picking up slacks, in no case should one side rail and sleepers is tackled, but it should be ensure that those sleepers being tackled, should cover the whole sleepers involving both the rails at any spot.</p> <p>Attention to slacks should be need based. Need for the same being determined by Inspections of P-Way supervisors/track Engineers or EIC. Picking up slacks shall be done where the track alignment is kinky or top level is uneven.</p>

3	KEY MAN : Daily examination of complete track and tightening their fittings by deploying of key man for daily patrolling with mobile phone and checking the track for 8 hours for length of 3 to 5 KM by each key man with tools and tackles. The patrolling shall be 8 AM to 5 PM. The key man shall carry out job for tightening of ERCs, liners, rail screws, plate screws, points & crossings fittings, guard rail fittings, trap switch fittings .The patrolling shall be as per instruction of EIC for working period.
4	Ballast profiling, boxing and dressing with special attention at curves etc. as per IRPWM manual. Ballast profiling, boxing and dressing with special attention at curves etc. Carrying ballast to the track section where scanty ballast is observed.
5	Maintenance of points and crossing and minor rectification like alignment and lubrication, proper crossing gauge on the check rail and its adjustment for clearance to the correct profile with through packing as per requirement.as per IRPWM manual.
6	Retired PWI Inspection for P-Way points & crossing / fish plates/ clips/ track alignment rain cuts, holes and complete track defects if any by OPGC push trolley or motorized trolley with agency gang man /trolley man. Weekly thrice or as per instruction of EIC based on work requirement. The PWI should maintain inspection and "Daily Material Transaction Register" for submission at the end of month to EIC. The agency / contractors PWI will prepare and maintain a "Section Register" to record important details of the track/section. The PWI shall maintain and submit all P-Way, embankment, bridges, and registers including points & crossing registers, curve registers etc. Every month to EIC for next month schedule and repair work of track & Bridges.
7	Painting of check Rail both ends with white paints of approved brand up to a length of 200 mm in the rail. Material and brushes are to be supplied by OPGC as per IRPWM manual.
8	Jim crewing of KINKY Rail and Tongue Rail. The rail shall be rectified during buckling of track and as per IRPWM manual.
9	Realignment of curve/readjustment of vertical curve as and when required involving slewing of track with desired versine followed by one KATCHA packing/through packing as per requirement and as per IRPWM Manual .
10	Maintenance of meter / Km / Curve / signal post lying along the MGR track (Post / Indicator & paints shall be supplied by the OPGC). Calculation and marking of Station No., Super elevation, chainage and versine etc. Marking of Kilometer post (chainage), creep indicator post, points and crossing in stations, number of curves, super elevation of curves, transition length posts (TPTC, TPCC), degree of curvature post, versine of curve, HFL of bridges, danger level of bridges etc. The work shall include painting of all type rail indicator, Painting of wood /steel structure of P-way equipment as per requirement. Only Paint material, brushes are to be supplied by OPGC. Painting and leveling of Posts, Safety Sign Boards, Level crossing gates, barricades, signboards chainage posts are to be supplied by OPGC
11	Removing weeds & bushes in ballast section and cess upto 3.5m from center line of track in section & station yard, as specified by Engineer In-Charge including disposal of branches, bushes outside cess /yard.
12	Minor Cess repair including cess cutting, filling, and repair of minor rain cuts on embankment as and when required.
13	Maintenance of manned and unmanned level crossings with proper lubrication etc, as per IRPWM manual. Material are to be supplied by OPGC.
14	ERC re-greasing as per IRPWM manual. Material & Grease to be supplied by OPGC.
15	Emergency maintenance & repair of track by engaging gang man at any section during dislocation due to derailment of loco/wagon. All material shall be supplied to you by OPGC.
16	Emergency maintenance & repair of track by engaging supervisor any section during dislocation due to derailment of loco/wagon. All material shall be supplied to you by OPGC.
17	Supervision of Emergency maintenance & repair of track by engaging PWI at any section during dislocation due to derailment of loco/wagon OPGC shall provide material for that work.

18	Greasing of face of outer Rail in the curve as per instruction of EIC. Grease shall be supplied by OPGC as per IRPWM manual.
19	Side drain, Catch water drain and Cross drain cleaning work on any place of track for preventing the damage of track.
20	Gang patrolling shall be done during abnormal rainfall. Pre-monsoon precautionary measures comprising clearing of vent ways shall be done by Engagement of manpower (Gang man).
21	Gang patrolling shall be done during abnormal rainfall. Pre-monsoon precautionary measures comprising clearing of vent ways shall be done by Engaging Supervisor
22	Maintenance of gauge level, elevation, joints etc on the track circuited area (with modification if required) or at the concrete platform located near the In-motion Weighbridge at the approach and beyond the Track hopper of Coal Handling Plant at ITPS , Chharlla and Gidhaghara station .
23	Renewal of worn out / broken 1 in 8 1/2 crossing only with fitting & fastening including lead up to 30 mtr but excluding sleepers as per IRPWM manual .
24	Lifting of track up to 25 mm to 75 mm. Each lift not more than 25 mm and as per IRPWM manual.
25	Interchanging of rail when rail wear is out of limit for rake movement on casual requirement as per IRPWM manual.
26	Installation of PSC sleepers as per IRPWM manual : Installation of PSC sleeper of straight / curve track with any type of sleepers Removing the existing sleepers and its fastening including stacking them outside track clearing removed sleepers from all infringement to moving dimension inserting new sleepers at specified spacing along with fastening, including tightening of fasteners, Sleeper at site involving lead not more than 100mtr including leading of both new and released sleepers and fastenings from site to track & vice versa and as per IRPW manual.
27	Renewal of worn out / broken in 1 in 8 1/2 straight /curved switches of Rail with Fitting & Fastening including lead up to 30 mtr but excluding sleepers.as per IRPWM manual .
28	Renewal of tongue rail left / right of 1 8 1/2 (straight and curved switch) with complete fitting and fastening including lead up to 30 mtr but excluding sleepers per IRPWM manual .
29	Transportation of P-way (rail, ballast, sleeper etc) and S&T heavy material from OPGC store/any site of OPGC to any other location of our MGR system by contractors own vehicle 407, small truck of six wheeler & tractor etc, including loading and unloading. Lead from 0 mtr to 5 Kilo meter.
30	Transportation of P way (rail, ballast, sleeper etc) and S&T heavy material from OPGC store/any site of OPGC to any other location of our MGR system by contractors own vehicle 407, small truck of six wheeler & tractor etc including loading and unloading Lead from 5 Kilo meter to 20 Kilo meter
31	Transportation of P way & S&T material(rail, ballast, sleeper etc) from store/any site of OPGC to any other location of our MGR system by OPGC dip lorry / material trolley including loading and unloading Lead Up to 1 KM
32	Transportation of P way & S&T material(rail, ballast, sleeper etc)from store/any site of OPGC to any other location of our MGR system by OPGC dip lorry / material trolley including loading and unloading for Extra lead for each subsequent lead 0.5 Kilo meter / MT (Metric ton)
33	Pulling back creep in ordinary track (for single rail) for Rail/short weld Rails of 39 mtrs and re-fixing anchors & all other fittings including slack packing and Squaring of displaced sleepers(Average creep 30 cm in two sides i.e 15 cm on each side rail in the running track. Creep adjustment by pulling back Rails (as & when required).IRPWM procedures are to be followed.
34	Renewal of Rails of any section with fitting and fastening including stacking within 30 mtrs, in connection with Rail fracture or damage (removal of existing rail and placing new rail.)
35	Lubrication of fish plated joints, bolts and nuts as per IRPW manual (consumables like grease etc to be supplied by OPGC). Lubrication & oiling of fish plate and bolts for one section once a year as per BOQ.

36	Replacement/renewal of missing fittings and fasteners (nut, bolt and ERC of the track as per IRPWM manual)
37	Replacement of GR sole plate of track as per IRPWM Manual.
38	Replacement of GFN / Metal liner /ERC of track as per IRPWM manual.
39	Maintenance of OPGC dip lorry, checking of all the parts of the lorry for mechanical parts, proper lubrication and minor repair. OPGC shall provide spares for the work.
40	Maintenance of OPGC motorized trolley, checking of all the parts of the trolley for electrical parts, mechanical parts and proper lubrication. OPGC shall provide spares for the work.
41	Overhauling of level crossing with proper lubrication and as per IRPWM manual.
42	Drilling of Rail of 60 kg by agency hand tools as per IRPWM Manual.
43	Shallow screening of track ballast in crib portion as per IRPWM Manual.
44	Inspection of one steel girder bridge span by Railway retired experts of SSE level ; The agency has to engage railway experts , supervisor and skilled workmen in steel bridge for minor repair and to check riveting of the superstructure of bridge as per EIC and furnish the report for next schedule repair work
45	Hiring of JCB for track and miscellaneous work .Hiring of JCB for track work and miscellaneous work of MGR (Unit = 1 hour = 1 hr. Diesel and operator and other requirement shall be agency account.
46	Rail track welding with supply of raw material for welding for fracture in rail track as per IRPWM manual
47	Repair of cess including earth work (Earth work in ordinary soil within a lead of 100M, and lift up to 7.5M including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per direction of the Engineer-In-Charge
48	Conveying from stacks and spreading of stone ballast within a lead of 100m and lift up to 4.5 M.
49	Supply of coarse sand and filling in track as per instruction of EIC.
50	Cutting of Rail of 60 kg by agency hand tools.
51	Supply of Crusher dust in track as per direction of EIC.
52	Patrolling of track from block station to Block station by foot or OPGC trolley engaging key man and one helper in each trip for inspection for ensuring safe rake movement in night.
53	Carrying out the USFD testing of rails by SRT by using 0 degree / 4 Mhz, 37 degree / 2 Mhz and 70 degree / 2 MHz probes by NBC method as per IR standard. Specification for ultrasonic testing of rail welds as applicable to rails testing complete as directed by EIC. The testing shall cover minimum 94 % of the Railhead cross sectional area, 100 % of the web cross sectional area and 100 % of bottom flange of rail falling below web.(This shall cover the Gauge face corner defects also).The rate for testing includes cost of contractor labor, operator, USFD machine, Tools and plants i.e probes , couplant, etc. and all other incidentals charges related to testing work including taxes, transportation etc. The item also includes the detection marking of the defects detected as per standard Railway and RDSO practices including submission of daily reports complete.as per latest amendment of RDSO

54	<p>Carrying out the USFD testing of welds (thermic and flash butt welding) , by using 0 degree and 70 degree probes for head testing ,70 degree (2 Mhz) , 20 mm x20mm single crystal probe for flange testing and 45 degree (2 Mhz) / 70 (2 Mhz , 8 mm x 8 mm) probe for testing as applicable as per Indian railway standard specification for ultrasonic testing of rail / weld as applicable to weld testing complete as directed by EIC . The testing shall cover 100 % flange X sectional area, 100 % web X sectional area and 94 % of weld head X sectional areas. The rate for testing includes cost of contractor, labor operator USFD machine , tools and plants i.e probes , couplants etc and all other incidental charges related to testing work including taxes ,transportation etc. The item also include the detection , marking of the defects detected as railway standard RDSO and Railway practice including submission of daily report complete.</p>
55	<p>Engagement of Manpower (Unskilled workman) for chharlla coal cleaning work. Removal of coal from the track at the Loading yard & disposal thereafter at designated area or as per requirement for other track works and as per the direction of Engineer-In-Charge.</p>
56	<p>Engagement of Manpower (Semiskilled Gang man) for chharlla coal cleaning work Removal of coal from the track at the Loading yard & disposal thereafter at designated area or as per requirement for other track works and as per the direction of Engineer-In-Charge.</p>
57	<p>Providing technical service for epoxy application on track hopper & approach for epoxy application, grouting, leveling of track and fixing MCI inserts Providing technical service for epoxy application on track hopper , weighbridge of hopper area & approach for epoxy application, grouting, leveling of track and fixing MCI inserts.</p>
58	<p>Repairing of track hopper approach (Rake entry side) inserts by fast setting material. The agency is to supply material and service for leveling and tightness of insert.</p>
59	<p>Grouting / anchoring of weighbridge approach with threaded rod and chemical RE 500 (Hilti make) / or other branded product as per EIC with all material by the agency.</p>
60	<p>Supply& stacking of Hard Granite ballast, Manufacturing, supply and stacking of machine crushed Track Ballast conforming to RDSO Specification (IRS-GE-1) with latest correction as per instruction of EIC.</p>
61	<p>Supplying of stone boulders weighing not less than 35 kg each at specified bridge locations as per requirement.</p>
62	<p>Deep screening of track ballast as per IRPWM manual.</p>
63	<p>Renewal of concrete sleepers by concrete sleepers (Replacement of any type of sleepers in track with PSC sleepers lying on cess or at Bridge Approaches for casual renewal at isolated locations with all fittings, Complete to specified gauge & cross level with contractor's tools including packing and dressing of ballast as directed by Engineer In-Charge. Released materials shall be neatly stacked and handed over at specified location or near either side of Bridge approaches as directed or as per IRPWM manual.</p>
64	<p>Engagement of welder for welding work at track The agency has to engage skilled workmen/ welder for any repair work of track</p>
65	<p>Lifting the newly inserted BG 60 Kg. / 52 Kg. turnouts/ trap switches to required level to provide a ballast cushion up to 225mm from existing level with Railway's stone ballast in convenient stages including one round of through packing after completion of final stage of lift, levelling, aligning, gauging and boxing etc, with contractor's labor , tools, with all lead and lifts and as directed by the Engineer-In-Charge as per IRPWM manual.</p>
66	<p>Supply of oxygen gas for rail repair work.</p>
67	<p>Supply of DA gas for rail repair work.</p>
68	<p>Track hopper maintenance as per EIC.</p>

69	Track lifting from 75 mm - 150 mm as per requirement and IRPWM manual.
70	Inspection of track by Railway retired SSE level officer. The agency is to provide Railway retired SSE level Engineer track inspection and submitting report to OPGC within one week for next schedule maintenance.
71	Supplying and fixing HSFG bolts of any dia and any length with suitable nuts including DTI washers conforming to IRS-B1-2001 for bridges and steel structures with contractors labor, tools and plants and lead and lift etc.
72	Metalizing of steel work of girders with sprayed aluminum after surface preparation by Sand/grit blasting, followed by one coat of primer (IS 5666) & one coat of Zinc Chrome primer (IS 104) and two coats of aluminum paint (IS:2339) with all labor, T&P and material as a complete job duly conforming to all relevant specifications and process given under Clause 39 of IRS-B1-2001 Note: Nominal Thickness of aluminum coating shall be 150 microns. DFT of Zinc chrome primer shall be 25-30 microns and DFT of each coat of aluminum paint shall be 12-14 microns.
73	Providing and fixing railing used in rows for footpath or anti-crash barrier railing with B class G.I. pipe 65/50 mm nominal dia including cost of M.S. angle and channels in vertical posts, welding / bolting, priming painting with one coat ready mix Zinc Chromate conforming to IS104 with DFT of 25- 30Microns, followed by one coat of Zinc Chrome red oxide conforming to IS 2074 with DFT of 25 Microns with all material, labor, T&P as a complete job.
74	Supplying and fixing M.S. Angles 65mmx 65mm, 8mm or any other size conforming to IS 2062 in the nosing of steps of stair cases of Foot Over Bridges including provision of 10mm dia, anchor bar 600mm c/c and fixing with main girder with M.S. flat, making anti-slip arrangements over the top of nosing as per approved scheme given by Engineer-In-Charge with all material, labor, T&P as a complete job.
75	Providing and fixing various size HTS holding down bolts conforming to IS:1364 in concrete column or in other structures with proper nuts, bolts, washers/plates, grouting of holes with all material, labor, T&P as a complete job. Note: Cement used in grouting will be paid separately under relevant item.
76	Supplying, Fabricating and fixing access ladders, inspection platforms, Trolley refuges etc, on bridges with structural steel conforming to IS 2062 including welding / bolting, priming painting with one coat of ready mixed paint of Zinc Chromate (IS 104) with DFT of 25-30 microns followed by one coat of Zinc Chrome Red Oxide (IS 2074) with DFT of 25 microns with all material, labor. T&P as a complete job.
77	Surface preparation of steel work of bridge plate/composite girders by cleaning with scrappers and/or wire brushes to remove all rust and loose or perished paint to prepare perfectly clean & dry bare metal surface free from all dirt/foreign material & ready for initial coat of paint. Rate includes cost of labor, consumables, brushes, tools & plants, ladders, scaffoldings, jhoola, hanging scaffolding staging etc.
78	Fixing Joggled Fish Plates with bolt / clamp (supplied by OPGC) in running track conditions at welds on rail, as directed by Engineer- In-Charge (drilling of holes in rail, if required, shall be paid separately with 2 bolt Or 4 bolt or clamp.

79	Anti-corrosive painting of rail on running track of any sleeper density on web, foot etc, Including liner contact area (excluding bottom of foot) and fishing plane as per requirement with two coats of thickness of 100 microns each by bituminous black paint conforms to IS-9862 of reputed make including painting of liners, ERCs and including surface preparation, i.e. cleaning with wire brush / sand paper as a complete job as per procedure prescribed in latest edition of IRPWM
80	Replacing existing glued joint rail with cut rails or with glued joint rail or insertion of glued joint by cutting existing track under traffic condition by cutting rails, re-fixing with all rail sleeper fastenings and providing required gaps for carrying out welding as an alternative to drilling holes or joining rails with fish plates duly drilling holes as required and as directed by Engineer-In - Charge. Note: (1) Drilling holes & rail cutting will be paid separately. (2) Transportation of materials to the site shall be paid extra as per BOQ
81	Cleaning and greasing of free end and fixed end of Steel girder Bridge bearing with Grease Graphite, Kerosene oil and other materials as per Para 222 of Indian Railway Bridge Manual 1998 with painting of Bearing as per requirement complete as directed by Engineer In-Charge (Span up to 18.3 mtr)
82	Cleaning and Greasing of free end and fixed end of Steel girder Bridge bearing with Grease Graphite, Kerosene oil and other materials as per Para 222 of Indian Railway Bridge Manual 1998 with painting of Bearing as per requirement complete as directed by Engineer In-Charge (Girder of clear span above 24.40m & up to 30.5m)
83	Cleaning and Greasing of free end and fixed end of Steel girder Bridge bearing with Grease Graphite, Kerosene oil and other materials as per Para 222 of Indian Railway Bridge Manual 1998 with painting of Bearing as per requirement complete as directed by Engineer In-Charge (Girder of clear span above 30.5m)

METHOD OF MEASUREMENT OF ETKM TRACK:

Track length measurement for maintenance of P-Way will be made as follows: -

The unit of measurement for track length shall be kilometers. For this purpose, the track shall be jointly measured. It is to be noted that a measurement of one kilometer on left and right rail of the track united will constitute 1 KM of track length. This shall not be considered as 2 Km. Further the following co-efficient / weight age shall be considered in measurement of track length.

Weight age of non-running lines like sick siding and concrete paved portions of track hopper, fuel oil unloading area, pits of workshop etc.= 0.40.

Weight age of running lines = 1.

Points & Crossing by equating 10 sets of Points & Crossing to one track Km. i.e. 1 set = 100 mtr.

For concrete paved portion where maintenance is not required shall be decided by the Engineer-In-Charge and shall not be paid as per direction of EIC.

In case where the method of measurement is not provided in the said Specification or in the Technical Specification given herein, the method to be adopted to shall be as per similar work/ or as per the instruction of the Engineer-In-Charge.

SPECIAL CONDITIONS OF CONTRACT

- 1.0** The work shall be executed with sufficient supervision for each gang and the work shall be completed submitting the detail work completion report.
- 2.0** The work men shall have thorough knowledge for track maintenance and the technical competency to be checked by EIC before putting the workman in the job.
- 3.0** The Contractor shall have to deploy a Site-In-Charge (SIC) who should always be available in this Power Station during the period of Contract to ensure the quality of maintenance work. The Site-In-Charge must possess inline knowledge, workmen safety standard and skill to provide maintenance of Permanent Way system installed at IB Thermal Power Station.
- 4.0** The Contractor shall deploy requisite numbers of workmen and supervisor for each gang to undertake this maintenance work. The Contractor shall deploy the workmen, who have adequate knowledge regarding the maintenance of Permanent Way System. The Contractor has to deploy a person who has retired as a Permanent Way Inspector at SSE level from Indian Railway (PWI) to ensure the track maintenance work otherwise penalty per month of Rs 20000.00 shall be imposed or as per discretion of EIC. Non engagement of PWI as per scope of work in every month shall lead to contractor inability to provide experts for the ongoing work or we may cancel the Contract without further intimation. Bio-data of PWI, Mate and Supervisor shall be submitted before execution of work. If any of the Contractor's workmen is found unqualified / inexperienced for a work, he will not be allowed to do the jobs / works. The Workmen and other personnel engaged by the Contractor for this work shall at no point of time have any liability on OPGC concerning to their employment under the Contract agreement.
- 5.0 ACTION WHERE NO SPECIFICATION HAS BEEN PROVIDED**

In the case of any class of work for which there is no such Specifications has been provided, such work shall be carried out in accordance with the RDSO drawing/Indian Railway Standard Specifications. In case there is no such Specifications are also available, the work shall be carried out as per manufacturer's Specifications. In case there are no such Specifications as required above, the work shall be carried out in all respect in accordance with the instructions and requirements of the Engineer-In-Charge.
- 6.0** The schedule of maintenance shall be as per Railway and as decided by our EIC for each jobs of BOQ I & II.
- 7.0** You shall have to deploy sufficient number of semiskilled and skilled gang man, high skilled mate and Supervisor in each gang having track work expertise for upkeep and maintenance of track as per instruction of EIC.
- 8.0** You shall have to accept to other work which is not in the BOQ but the system requires for rake movement, In that case the agency has to agree the rate of SOR of Indian Railway as decided by the EIC.
- 9.0** The works shall be measured and payment shall be released accordingly decided by the EIC. The non-performance of work track work as per EIC shall be considered as substandard maintenance or nonperformance.
- 10.0** You shall use proper sign, signal, flags and obstacles during maintenance work for safe movement of rake.

11.0 The checking /inspection of track by PWI shall be for minimum 12 days in a month or as per BOQ. The penalty per day as per EIC shall be deducted from the bill for nonperformance .OPGC shall decide for alternate arrangement of Contract for continuous non engagement of PWI.

12.0 Familiarization:

- a) Bidder shall visit the site and make himself familiar with the site condition. If the Contractor needs any technical details or additional information regarding equipment or work procedure in relation to the proposed work, he should do so before submitting the bid to OPGC.
- b) It is imperative on each bidder to fully acquaint himself of all local conditions & factors, which may have effect on the execution of the work covered under the specifications. OPGC shall not entertain any request for clarifications from the bidder regarding such local conditions post-bid.
- c) OPGC shall entertain no claim, whatsoever, nor any change in the time schedule of the contract there of which arise on account of clear information or its effect on the cost of works to the bidder.

13.0 Termination of Contract:

- a) In case of failure to start the work within due date, OPGC reserves the right to terminate the Contract without reference to you.
- b) If the quality of the work is found to be unsatisfactory, the Contract shall be terminated with immediate notice.

14.0 The Contractor and his employees should maintain the House Keeping of the equipment and their surroundings and no material, waste items, lubricants etc. can be left at site.

15.0 Vehicle:

All the vehicles (except used by specific person) to be deployed by you shall be commercially registered with the transport authority. The vehicles must have a comprehensive insurance policy and the driver must have valid driving license.

16.0 Facilities to be provided by OPGC.

Accommodation for supervisors/workmen subject to availability on chargeable basis, and on prior intimation and request. The vendor shall provide suitable habitable amenities for the workmen to be deployed at the site.

Bridge Details of OPGC I & OPGC II track

SI No	Bridge no	Chainage (M)	Location (inside plant/outside plant)	Type of Bridge	Barrel length in M	Size
1	U/B-4	-1761	In plant	RCC Box culvert	16.898	2X4.0MX3.0M
2	U/B-3	-1185.00	In plant	RCC Box culvert	6.005	1x2.20Mx1.20 M
3	U/B-2	-550.00	In plant	RCC Box culvert	6.1	1X2.615Mx5.092 M
4	U/B-1	212.00	In plant	RCC Box culvert	7.35	1X2.0Mx1.20M
5	1	750.00	In plant	RCC Box culvert	7.852	2X5.05 MX4.0 M
6	2	1270.00	In plant	RCC Box culvert	15.884	1X3.0MX3.0M
7	3	1708.00	In plant	RCC Box culvert	22.06	1X6.10 M + 1X4.X3.683 M
8	4	2937.00	In plant	RCC Box culvert	13.038	1X5.0MX4.0M
9	5	3567.00	Outside plant	RCC Box culvert	8.082	2X2.825MX2.0 M
10	6	3818.00	Outside plant	RCC Box culvert	6.205	1X2.10Mx3.60 M
11	7	4462.00	Outside plant	RCC Box culvert	6.43	1X3.66Mx3.04M
12	8	4630.00	Outside plant	RCC Box culvert	6.995	1X3.66Mx3.15M
13	9	5242.00	Outside plant	RCC Box culvert	6.76	1X3.66Mx2.43 M
14	11	5421.00	Outside plant	RCC Box culvert	5.445	1x1.2x1.2 M
15	13	6337.00	Outside plant	RCC Box culvert	6.217	2X4.0Mx3.0 M
16	14	6564.00	Outside plant	RCC Box culvert	6.552	1X3.1 MX2.0M
17	15	6754.00	Outside plant	RCC Box culvert	13	1X2.0MX2.0M
18	16	7076.00	Outside plant	ROB PSC Girder Bridge		1X24.40 M
19	17	7905.00	Outside plant	ROB PSC Girder Bridge		1X30.50 M
20	18	9567.00	Outside plant	ROB PSC Girder Bridge		1X24.40 M
21	18A	9680.00	Outside plant	Hume pipe culvert	10	1 x 1.2M DIA
22	19A	10640.00	Outside plant	culvert	10	2 X 0.6M DIA
23	19	10660.00	Outside plant	ROB PSC Girder Bridge		1X24.40 M

24	20	11100.00	Outside plant	RUB Steel Girder Bridge		1X18.30 M
25	21	11515.00	Outside plant	RCC Box culvert	31.182	2X6.0MX6.0M
26	22	11818.00	Outside plant	RCC Box culvert	15.13	2x6x6 M
27	23	12071.00	Outside plant	RUB Steel girder bridge		1X18.30 M
28	24	12453.00	Outside plant	RCC Box culvert	44.568	1X4.0MX4.0M
29	24A	12507.00	Outside plant	RUB Steel girder bridge		1 X 24.40 M
30	25	12854.00	Outside plant	RUB Steel girder bridge		1X18.30 M
31	25A	12824.00	Outside plant	Hume pipe culvert	42.5	1 x 1.2M DIA
32	26	13250.00	Outside plant	RCC Box culvert	27.49	1X4.0MX4.0M
33	27	13607.00	Outside plant	Steel girder bridge		5X18.30 M
34	27A	13822.00	Outside plant	Hume pipe culvert	30	1 x 1.2M DIA
35	28	14100.00	Outside plant	RCC Box culvert	7.99	1X4.0MX4.0M
36	29	14600.00	Outside plant	ROB PSC Girder Bridge		1X30.50 M
37	30	15655.00	Outside plant	RCC Box culvert	7	1X3.0MX3.0M
38	32	16525.00	Outside plant	RCC Box culvert	41.816	1X4.0MX4.0M
39	32A	16805.00	Outside plant	RUB RCC Box culvert	24.28	1X6.0MX6.0M
40	33	16995.00	Outside plant	RUB RCC Box culvert	23.568	1X6.0MX6.0M
41	33A	17255.00	Outside plant	RCC Box culvert	77.917	1x2.0x2.0M
42	34	17317.00	Outside plant	RUB RCC Box culvert	48.7	1X6.0MX6.0M
43	34A	17550.00	Outside plant	RCC Box culvert	53.512	1x2.0x2.0M
44	35	17750.00	Outside plant	RCC Box culvert	56.244	1X4.0MX4.0M
45	36	18325.00	Outside plant	RCC Box culvert	60.222	1X3.0MX3.0M
46	37	18415.00	Outside plant	ROR Steel girder bridge		3X30.50 M
47	38	18550.00	Outside plant	RCC Box culvert	43.314	1X3.0MX3.0M
48	39	18940.00	Outside plant	RUB RCC Box culvert	7	1X5.0MX5.0M
49	40	19300.00	Outside plant	RCC Box culvert	48.71	1X3.0MX3.0M
50	41	19850.00	Outside plant	RUB RCC Box culvert	17	1X5.0MX5.0M
51	42	20150.00	Outside plant	RCC Box culvert	26.876	1X4.0MX4.0M
52	43	20475.00	Outside plant	RCC Box culvert	14.318	1X4.0MX4.0M

53	44A	21100.00	Outside plant	Hume pipe culvert	45	2x1.2 M DIA
54	45	21347.00	Outside plant	RUB RCC Box culvert	12.406	2X7.0MX5.2M
55	45A	21500.00	Outside plant	Hume pipe culvert	40	2x1.2 M DIA
56	46	21672.00	Outside plant	RUB Steel girder bridge		1X61.00 M
57	47	22032.00	Outside plant	RUB RCC Box culvert	12.88	1X5.0MX5.0M
58	47A	22015.00	Outside plant	RCC Box culvert	39.69	1x2x2 M
59	48	22475.00	Outside plant	RCC Box culvert	18.536	1X3.0MX3.0M
60	49	22925.00	Outside plant	RCC Box culvert	18.85	1X6.0MX6.0M
61	50	23400.00	Outside plant	RCC Box culvert	19.754	1X3.0MX3.0M
62	51	23841.00	Outside plant	ROB PSC Girder Bridge		1X30.50M

Curve and Gradient details of OPGC Track of MGR system

Gradient details OPGC MGR				
CHAIN	GRAD	RF	LEVEL	GRAD
-3970.17	260	F	201.722	260
-3886.5	0	L	201.4	0
-3344	1500	F	201.4	1500
-2294	0	L	200.7	0
-1675	780	R	200.7	780
-1350	780	F	201.117	780
-1025	0	L	200.7	0
1300	1500	R	200.7	1500
2350	0	L	201.4	0
2876.2	260	R	201.4	260
3150	242	R	202.453	242
3765	150	R	204.994	150
4000	230	R	206.561	230
4600	200	R	209.17	200
4760	250	R	209.97	250
5380.572	171	R	212.452	171

5700	0	L	214.32	0
5900	1000	F	214.32	1000
6100	0	L	214.12	0
6750	200	R	214.12	200
8050	1200	R	220.62	1200
9550	200	F	221.87	200
10978.25	0	L	214.729	0
11180	200	F	214.729	200
11996	0	L	210.649	0
12150	225	F	210.649	225
12775	0	L	207.871	0
12940	800	F	207.871	800
13500	0	L	207.171	0
13700	200	R	207.171	200
14148	0	L	209.411	0
14605.5	150 (C)	R	209.411	217
14862		R	210.593	150
15435		R	214.413	203
15690		R	215.669	150
15790		R	216.336	214
16330		R	218.859	204
16830		R	221.31	210
17352		R	223.796	150
17645		R	225.749	202
18125		R	228.125	150
18325		0	L	229.458
18515	150 (C)	R	229.458	150
18760		R	231.091	196
19445		R	234.586	208
19890.5		R	236.728	207
20352		R	238.957	150
20970		R	243.077	216

21411.75	0	L	245.122	0
22150	1200	R	245.122	1200
23400	1200	F	246.164	1200
24125	200	F	245.56	200
25000	150 (C)	F	241.185	150
26101		L	233.845	0
26500		F	233.845	183
27215		F	229.938	150
27460		F	228.305	169
27680		F	227.003	150
28525		F	221.37	212
29000		F	219.129	150
29581.5		0	L	215.252
30300	170	R	215.252	170
31700	0	L	223.487	0
31960.25	150	R	223.487	150
33600	200	R	234.419	200
34100	1000	R	236.919	1000
35550	200	R	238.369	200
37551.59	0	L	248.377	0
37875	200	F	248.377	200
38670.4	0	L	244.4	0
39150	900	R	244.4	900
39975	0	L	245.317	0
40125	150	R	245.317	150
42140	200	R	258.75	200
42390	0	L	260	0

Curve details of MGR system

Curve no.	R/L	Radius	Degree	TPTC-1/TP-1	TPCC1	TPCC2	TPTC-2/TP-2	Curve length
18	R	437.5	4.00	10035.47	10125.47	10167.85	10257.85	222.38
18-A	R	458.3	3.82	11209.45	11239.45	11279.48	11309.48	100.03
18-B	L	462.3	3.79	11355.9	11385.9	11425.93	11455.93	100.03
19	R	1889.8	0.93	11856.04	11896.04	11936.05	11976.05	120.01
20	R	420	4.17	1215.37	12285.37	12387.78	12457.78	11242.41
20-A	L	600	2.92	12520.01	12560.01	12583.4	12623.4	103.39
20-B	R	1750	1.00	12948.06	12988.06	13028.12	13068.12	120.06
21	L	340.9	5.13	14319.5	14389.5	14790.31	14860.31	540.81
22	R	404.7	4.32	15436.89	15526.89	15598.12	15688.12	251.23
23	R	350	5.00	15793.07	15903.07	16213.27	16323.27	530.2
24	L	400.8	4.37	16393.01	16503.01	16835.34	16945.34	552.33
25	L	370.759	4.72	16945.34	17090.65	17220.65	17350.65	405.31
26	R	410.9	4.26	17650.8	17740.8	18031.99	18121.99	471.19
27	R	450.351	3.89	18761.1	18871.1	18972.927	19082.927	321.827
28	L	378.173	4.63	19465.77	19555.77	19767.186	19857.186	391.416
29	R	386.015	4.53	19910.46	20000.46	20241.817	20331.817	421.357
30	L	346.982	5.04	20990.25	21100.25	21453.426	21563.426	573.176
31	R	292	5.99	21740.19	21830.19	22223.33	22313.33	573.14
32	L	591.462	2.96	22423.43	22513.43	22643.995	22733.995	310.565
33	R	452.2	3.87	24397.45	24497.45	24828.8	24928.8	531.35
37	L	604.68	2.89	33619.15	33709.15	33819.69	33909.69	290.54
38	R	1811.94	0.97	38177.04	38217.04	38387.045	38427.045	250.005
39	L	926.946	1.89	42166.95	42246.95	42307.11	42387.11	220.16
40	L	301	5.81	44400			45443.709	1043.709
41	R	588.33	2.97	47160.17			47281.081	120.911
MCL-1	L	450	3.89	36.969			89.669	52.7
MCL-2	R	300	5.83	208.733			412.743	204.01

GENERAL TERMS & CONDITIONS

1. Contract Period: The period of contract is 02 (Two) years, excluding mobilization period of 07 days from the date of issue of LOI / Work Order.
2. The contractor is required to mobilize his men, materials, plant & equipment at his work site within 07 days of intimation to start the work, failing which the Engineer-In-Charge will annul the contract agreement at his discretion. The onus of proving that the delay in mobilization was beyond the control lies with the contractor. The Engineer-in-Charge after satisfying himself with the reason for the delay if any may allow extension of time to avoid the annulment of the contract.
3. Price: It is a work contract. The rates shall be quoted as per the prescribed price bid format enclosed. The rates quoted shall remain firm during the entire contract period of 02 years. There shall be no escalation irrespective of any changes in minimum wages or material rates during the contract period, any price implication shall be borne by the contractor.
4. Taxes, Duties & Statutory deductions: All applicable taxes, duties, levy & statutory dues etc. shall be deducted from your bills at the rate ruling at the time of payment of the bills.
5. Security Deposit and Release of Security Deposit: You shall deposit 7.5 % (i.e. 2.5% + 5%) of annual basic contract value as 'Security Money' in the following manner:
 - a) The agency shall submit initially security amount equivalent to 2.5% of the annual basic value of 1st year contract in shape of Demand Draft/Bank Guarantee in favour of OPGC Ltd. drawn on SBI/ CBI / UBI, Banharपाली within 15 days of receipt of LOI / WO. Similarly 2.5% of the annual basic value of the contract for 2nd year to be submitted prior to execution of 2nd year. OPGC shall return the DD/BG of 1st year, after receipt & verification of DD/BG of 2nd year. The DD/BG for 2nd year shall be returned after completion of defect dilution period of 2nd year, i.e. 03 months after completion of 2nd year. No interest shall be payable by OPGC on the security deposit amount.
Note: BG submitted shall be valid for 12 months from the date of issue for 1st year & for 2nd year BG shall be valid for 15 months from the date of issue.
 - b) Balance 5% of the annual basic value of the contract shall be deducted against each monthly RA bills & retained by OPGC. This security deposit money shall be released to the party after completion of defect dilution period of 03 months for each year. No interest shall be payable by OPGC on the security deposit amount.

The security deposit money shall be returned to the contractor without interest as stated above, subject to satisfactory performance, obtaining clearance from all concerned departments and submission of yearly completion certificate issued by the Engineer-in-charge. You shall rectify the defects pointed out during this period free of cost. All penalties, statutory payment etc. shall be recovered from this security amount, if required. No interest shall be payable by OPGC on the security deposit amount.

6. Defect dilution period:

The defect dilution period for the maintenance jobs in general shall be three (03) months from the actual date of completion of job duly certified by EIC against any poor workmanship and materials (if any) used. Any defective work noticed within the defect liability period shall be rectified by the contractor immediately on receipt of information. If the contractor fails to do so within 07 days of getting the information from the EIC, then the work will be rectified by engaging another agency and the cost will be deducted from the security deposit of the contractor.

During the contract period, contractor should ensure smooth execution of the job and shall execute the job as per the instruction of EIC.

7. Submission of bill: Bills in triplicate along with GST No for the measured work shall be submitted to Engineer-in-charge for verification after completion of work. The bills shall be prepared & raised as per GST Rules showing-
 - a) Name, address & registration number of such service provider
 - b) Name, address of the person receiving taxable service
 - c) Description, classification & value of taxable service provided
 - d) GST payable thereon.
8. Payment of bill: Payment after statutory deductions and other deductions like applicable taxes, duties, levies, penalties, security deposits etc. shall be released within 30 days from the date of acceptance of the monthly RA bill with prescribed measurement, material statement and statutory documents duly certified by Engineer-In-Charge. The contractor shall claim bills only for the items which have been completed during the billing period. The payment shall be made through e-mode facilities of RTGS / NEFT / Internet Banking. To facilitate the E-payment you shall return the enclosed Bank Mandate Form duly filled, along with the duplicate copy of the Work Order.
9. Measurement of work: The work shall be inspected / measured as directed by Engineer-in-charge and entered in the measurement book with signatures of both contractor and Engineer-in-charge or their representatives as a token of mutual acceptance.
10. Penalty:
 - a) In case of failure to make payment to the workmen within 07(seven) days after wage period i.e. any month, penalty @01% of gross value of bill for corresponding period for which wage is due per day of default shall be imposed & deducted from the interim running bill maximum to the extent of 05% of the gross value of bill for the said period. Repetition of such default for more than three times shall lead for termination of the contract with 07(seven) days advance notice to you.
 - b) In case of non-performance / continuous poor performance, the contract shall be terminated with 07(seven) days' notice and the work shall be done by any other means at your cost and risk till engagement of other agency. If the price of contract for the balance work shall be higher, the additional amount shall be recovered from the security or any dues of the contract or any other contract taken by you in OPGC.
 - c) In case of labor strikes, you shall arrange fresh workmen and perform the contract without any discontinuation. If there is a discontinuation of work for consecutive 03(three) days, the "Termination of Contract" clause shall apply. This will debar you to participate in any future bid in OPGC for next 05 years.
 - d) In case of failure to remove the scraps/debris within the stipulated period, the same shall be executed by other agencies at the cost and risk of the vendor and a liquidated damage @1(one) % of the contract value shall be imposed.
 - e) In case of any OPGC material is lost or damaged during execution of work due to your negligence or wrong workmanship, the cost of the same as per prevailing market rate plus departmental expenses shall be recovered from your bills.
 - f) In case of non-attendance of any of the recurring works on any day specified under the Scope of Work, a penalty @ 5%(five percent) of the monthly billing value shall be recovered from the Contractor.
 - g) Failure to rectify the defects shall attract penalty as mentioned above The Contractor must ensure the availability of Permanent Way System for transportation of Coal rakes subject 10/11 nos. of rake per day or as per the requirement of OPGC failing which a penalty @ 5% (five percent) of the monthly Contract value shall be recovered in each case. This penalty will be recovered over and above the penalty mentioned above.
11. Termination of contract:
 - a) In case of failure to start the work within due date, OPGC reserves the right to terminate the contract without reference to you.
 - b) If the quality of the work is found to be unsatisfactory, the contract shall be terminated with immediate notice.

- c) OPGC has the right to terminate the Contract at any point of time.
12. Offloading of job: In case it is observed during the tenure of the contract that you are not capable or in a position to complete the job, OPGC reserves the right to offload the same and get it done through other agencies at your cost and risk.
13. Subletting: The work shall not in any manner or degree be sublet. The work shall be executed under the direct supervision of the supervisors of your firm.
14. Indemnity: You shall keep OPGC indemnified from all liabilities resulting out of this contract and act of your workmen.
15. Works Programme/Quality Assurance Plan/Safety Plan:
Before starting the work, you shall submit detailed works programme, milestone of different activities, safety and quality assurance plan of the work to the Engineer-in-charge for his approval after which work shall be started as per the approved programme. Any other documents required by the Engineer-in-charge for the above work shall be submitted.
16. Permit to Work: Before the start of each work, you shall ensure that a valid and duly signed Permit to Work has been issued. Also, you shall ensure the issue of valid and duly signed Confined Space permit and Hot Work Permit if the same is required as per OPGC rule. All the permits shall be returned to the concerned Engineer after completion of the job.
17. Tools and Tackles: You should have adequate Tools and tackles for execution of the job and such Tools and tackles are to be made available during the entire tenure of contract and shall be submitted to the satisfaction of Engineer-in-charge. All Lifting Tools and Tackles brought by you shall have valid test certificate issued by the competent person approved by Director of Factories & Boilers, Odisha.
18. Labour and Statutory Regulations:
- You shall submit a copy of valid Labour License (if applicable) from competent authority to the Engineer-in-charge before commencement of work.
 - You shall submit a copy of Provident Fund and Employee State Insurance Registration Certificate number to the Engineer-in-charge before commencement of work.
 - You shall abide by all norms of Contract Labour (R&A) Act - 1970 and provisions of other applicable labour laws and rules made there under from time to time.
 - You shall comply with all provisions of Factories Act - 1948 and rules made there under from time to time.
 - Before commencement of work, you shall submit a copy of 'Group Insurance Policy'/'Employee State Insurance' (as applicable) covering employment accidental/ in respect of your workmen to meet your liabilities against benefit in respect of your personnel against Employees Compensation Act (Workmen Page 129 of 184 Compensation Act-1923) /Employees State Insurance Act, 1948 and furnish a copy of the same to the EIC. The work shall commence only after submission of the Group Insurance Policy/ Employee State Insurance (as applicable) to the EIC
19. Employees Provident Fund (EPF) and Employee State Insurance (ESI):
Provident Fund (PF) and Employee State Insurance (ESI) dues of all your workmen shall be deposited against the PF and ESI number allotted to you by competent authority. You shall declare that Provident Fund and ESI amount for the people engaged by you has been deposited as per rule.
20. Security Management Procedure:
- Entry Permit/Gate Access Card shall be issued to the contractor employee free of cost and to be displayed in person whenever they are inside ITPS premises.
 - At any time if the worker of any contractor leaves the job, it is the responsibility of the contractor or his representative to withdraw his Entry Permit/Gate Access Card and deposit at Security Pass Section.
 - In the event of expiry of the Contract, the contractor has to deposit the Entry

Permits/Gate Access Cards to Security at Pass Section and collect required No Objection Certificate (NOC) for the purpose of Bill Clearance by Finance Department.

- d) Against non-deposit of Entry Permits/Gate Access Cards after expiry of the Contract by the Contractor, penalty @Rs. 300.00 (Rupees Three Hundred Only) per each Entry Permit/Gate Access Card shall be recovered from the Bill of the contractor by Finance Department.
- e) No Final Bill of the contractor shall be released by Finance Department unless No Objection Certificate (NOC) is obtained by the contractor from Security Department against issue/deposit of Entry Permits/Gate Access Cards.

21. Safety, Health and Environment:

- a) Your service personnel shall abide by Safety, Health & Environment (SHE) Rules & Regulations for Contractors as per enclosure and obtain safety induction training from OPGC Safety Officer before starting the work. Any violation in the safety rules shall be viewed seriously and you shall be penalized as per OPGC Safety Rules.
- b) You shall ensure the medical fitness of your service personnel before the start of work.
- c) You shall submit Safety Plan of the work to the Engineer-in-charge before start of the work.
- d) While driving two wheelers inside the plant boundary Crash Helmet to be used positively. Violation of this rule will attract penalty

22. Dispute settlement: Any dispute or difference arising out of this contract shall be mutually settled and the decision of Managing Director, OPGC or his authorized representative shall be final & binding.

23. Jurisdiction: Appropriate Court of Bhubaneswar under the Odisha High Court shall have exclusive jurisdiction over all matters related to this contract.

Format No: ER 5/10– F2. **JOB SAFETY ANALYSIS (JSA), IB THERMAL POWER STATION, OPGC**

Serial No.	Department	Equipment	Location	Job description		
	MGR	P-WAY	CH	Preventive maintenance of P-way		
Analysis Done by (EIC/Supervisor)	Signature	Reviewed & Approved by (SIC)	Signature	Date of Issue	Date of revision	Revision No
EIC		SIC				
HAZARD TEXT/TYPE						
PHYSICAL HAZARDS	PHYSICAL HAZARDS	PHYSICAL HAZARDS	ELECTRICAL HAZARDS	CHEMICAL/ GAS HAZARDS	EXCAVATION	OTHERS
Noise	Fall from height	Force (Push/Pull)	Shock/ Electrocution	Flammable/ Explosive	Collapse/Sliding	Fire
Radiation	Fall (Slip/Trip)	Caught in/on or between	Static electricity	Fumes Inhalation	Underground live cable damage	Heavy Wind/Rain
Confined space	Fall down/below	Struck by/against	Arc/flash blast	Ingestion/Absorption	ERGONOMICS	Dust exposure
Exposure to pressurized Steam/Air	Fall of Objects from height	Extreme weather (Hot/Cold)	BIOLOGICAL HAZARDS	Body/Eye Contact	Poor Posture	Oil spill
Contact with Hot surface	Contact with moving parts	Poor illumination	Snake/Insect bite/Virus infection	Spillage	Repetitive motion	Human factor
PPEs to be used	Safety helmet, safety glass, safety shoes, hand gloves, dust mask					
Tools required	Screw, jack, Crowbar, claw, Hammer, pick-axe, Phowrah, rail catcher, Jim's crow, dip lorry, material trolley & push trolley.					
SEQUENCE OF BASIC STEPS		SAFETY, HEALTH & ENVIROMENT HAZARDS		SAFE JOB STEPS AND CONTROL MEASURES		
Through packing, Slack packing deep screening, shallow screening, removal of coal, earth work.		Slipping/Hitting of crow bar, phowrah ,		Care should be taken at the time of packing so that slipping/Hitting of crow bar may not occur.		

	Hitting of ballast	Proper PPEs like helmet, safety shoe & safety glass are to be used during packing.
	Slipping of jack/slipping of spanner	Care should be taken at the time of packing so that the feet should not be under the rail and there should be proper jam of spanner with fish plate nut
Cleaning of weeds, wild bushes, grasses etc on the track & adjacent cess area.	Hitting of cutting tools.	Proper PPEs like helmet, safety shoe & safety glass, hand gloves are to be used during cleaning.
	Snake bite by poisonous snake	Repeated strikes by a long stick on the proposed area is to be made before cutting & cleaning of grasses to drive out any hidden poisonous snakes inside the grass & bushes.
Spreading of sand on track/earth/ballast	Slipping of legs & topping down during carrying of sand may fall in to the eye causing eye injury	Care should be taken to put feet on right area. Proper PPEs like helmet safety shoes and safety glass are to be used during spreading.
Renewal of bridge sleeper, enamel painting, fixing of 'J' hook bolt at steel girder bridge.	Falling from height.	Iron plate should be fixed on the sleepers and edge protection should be done during renewal of bridge timber at steel girder bridge. Safety helmet, safety belt, safety shoes, safety glass, hand gloves must be used during work. Safety helmet, safety shoes, safety glass, hand gloves must be used during work.
Transportation, Stacking, Removal & Insertion of PSC / Wooden sleepers.	a) Falling of sleepers on leg/ body portion causing major injury.) Slipping of legs.	Care must be taken during transportation and insertion of sleepers so that the sleepers will not fall and legs will not slip.
Replacement/ placement rail/fractured rail/pulling back of rails/ fixing of rail fittings	Slipping of rail during transporting & fixing may injured legs/hands due to improper handling.	Care to be taken during the transporting and loading/unloading of rails.
Emergency Safety Measures		Emergency Tel Nos- Fire- 777, 222257, Ambulance- 248/277, Hospital- 660
Over all Job Risk Category- (High/Medium/Low) :		

Remark- In case, persons find difficult in controlling hazards and minimizing risks of all the activities involved with a task, Dept. Leader/Safety Officer/ Factory Manager shall be consulted and finally the task shall be perform within acceptable risk level.