

# **GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED**

## **HEALTH AND SAFETY CHECKLIST**

### **Safety Related Check List during Construction of Transmission Lines**

Name of Tr. Line: .....

Loc.No: ..... Voltage Level:.....

Name of Contractor: .....

Name of Sub Contractor: .....

#### ***A. DURING TOWER FOUNDATION:***

<b>SN</b>	<b>Description of Activity</b>	<b>Feed back</b>	<b>Remarks</b>
<b>I) EXCAVATION :</b>			
1.	Dumping of Excavated soil. (Minimum 1.5 Mts. or half the depth of the pit which ever is more)	Yes/No.	
2.	Whether angle of repose of soil as per design in the foundation is maintained or not.	Yes/No.	
3.	De watering arrangement is available (If necessary)	Yes /No.	
4.	Working area has been protected properly to avoid against fall of passerby or animal in the excavated pit.	Yes/No.	
5	Shoring & Shuttering to protect the loose rock / soil against fall exists.	Yes/No.	
6	Arrangement of illumination at construction site is available, (if required)	Yes/No.	
7	Check proper/adequate arrangement is made for extension of electric supply. (Proper size of cable, Use of fuse, No loose connection for De-watering Pumps/ Illumination / Electric compressors etc. if applicable).	Yes/No.	
8	Check for damage / Uneven settlement of foundation.	Yes/No.	
9	Ensure Life saver arrangements have been made during construction of well foundation in river bed. (Where necessary)	Yes/No.	
10	Check that the adequate arrangement is made for the storage of blasting material at safe place, (if required)	Yes/No.	
11	Check that the blasting materials is handled with due care at site. (If required )	Yes/No.	-
12	Check that during blasting operation, Labour / Workmen / Passerby are at safe places and arrangement is made to inform public by caution markings (Red Flag) / Public Notices.	Yes/No.	
13	Check that the Blaster is holding the proper license issued by the appropriate authority, as per the Indian Explosive Act.	Yes/No.	
14	Check that the length of the fuse wire used during blasting operation is adequate.	Yes/No.	

SN	Description of Activity	Feed back	Remarks
15	Ensure Laying of temporary cable used for operation of Machines used during construction should not cause any danger for electrocution of workmen.	Yes/No.	
16	Check that PPEs i.e. Safety helmets, Safety Shoes, is used by blaster and their gang members during blasting.	Yes/No.	
17	Ensure that Shuttering and timbering has been made as detailed in I:S: 3764.	Yes/No.	
18	Ensure that before undertaking excavation, the soil has been tested and in case of availability of any explosive / dangerous gas, necessary arrangement must be made to remove / dilute such gases.	Yes/No.	
19	The positions of underground installations such as sewers, water pipes and electrical cables have been verified and in case of their existence, they must be isolated.	Yes/No.	
20	Arrangement shall be made to prevent external vibrations due to rail / road traffic (If required).	Yes/No.	
21	Safety is ensured during the construction of Tr. Lines for buildings, structures etc. which are coming in the vicinity of the excavated area from collapse. (If required)	Yes/No.	
22	Check that sufficient strong ladder of suitable length is available for ingress / outgress of persons in the pit	Yes/No.	
23	Lone worker should not be allowed to work in the excavated area beyond shoulder level.	Yes /No.	
24	Check for any possibility of seepage of water from nearby pond / river should be estimated and taken care of.	Yes/No.	
25	After excavation the work has been completed speedily and back filling done at the earliest.	Yes/No.	
<b>II) CASTING OF FOUNDATION / CONCRETING :</b>			
1	Check construction materials are stacked at safe place and also does not cause any danger. (Away from pit by 1.5 Mtrs. Or half the depth of pit, which ever is more. )	Yes /No.	
2	Check arrangement of illumination at Construction Site. (If required).	Yes /No.	
3	Ensure life saver arrangements have been made during construction of Well foundation in River Bed.	Yes/No.	
4	Check that the Concreting Mixer machine is placed at a safe place. (Not very near to pit.)	Yes /No.	
5	Check proper / adequate arrangement is made for extension of electric supply. (Proper size of cable, Use of fuse, No loose connection for De watering Pumps / Illumination / Electric compressors etc. if applicable).	Yes/No.	-
6	Check that laying of temporary cables used during construction activities should not cause any danger for electrocution to workmen.	Yes/No.	
7	Inspection of excavations shall be made by a Competent Person every day. In case, possible cave in or slide is apparent, all working in the excavation shall be seized until the necessary precautions have been taken to safeguard the possible cave in or slide.	Yes/No.	

I SN	Description of Activity	Feedback   Remarks	
8	Jacks and vertical supports shall be positioned in such a manner that the vertical loads are distributed equally and do not exceed the capacity of the jacks and the jacks are placed away from pit edge etc.	Yes/No.	
9	Proper Jacking arrangement is made to take the entire load of template.	Yes/No.	
10	In case of long template in stub setting, more jacks have been provided and check that the Jacks are placed on levelled and hard surface to avoid the unbalancing and fallen.	Yes/No.	
11	Wire mesh rolls shall be secured in order to prevent dangerous recoiling action.	Yes/No.	
12	Lone worker should not be allowed to work in the excavated area.	Yes/No.	
13	Check that sufficient strong ladder of suitable length is available for ingress / outgress of persons in the pit	Yes/No.	

**B. TOWER ERECTION :**

SN	Description of Activity	Feed back	Remarks
1	Check proper communication facility is available at site during Tower erection. (If required)	Yes/No.	
2.	Check damages or uneven settlement of foundation.	Yes /No.	
3.	Ensure the derrick used before tower erection has been checked for adequate strength/ size. Ensure for copy of test certificate for all the lifting machines and tackles.	Yes/No.	
4.	Ensure that the pulleys used before tower erection has been checked for adequate strength / proper size (diameter). Also in case of open type pulleys proper locking arrangements like providing of Safety Pin is made. Ensure for copy of test certificate for all the lifting machines and tackles.	Yes/No.	
5.	Ensure that the ropes used before tower erection has been checked for adequate strength / physical condition (Free from break of strands and knots etc.	Yes /No.	
6.	Check that the lifting tools and tackles i.e. Winch Machine, Chain Pulley Block, Trifor, D - Shackle etc. are in healthy condition and has been tested periodically. (Attach copy of test certificate).	Yes/No.	
7.	Ensure that permission has been obtained from Aviation Authority for erection of special towers. (Where necessary).	Yes/No.	
8	Ensure that permission has been obtained form Aviation Authority for erection of towers which comes in the vicinity of flying zone. (Where necessary)	Yes/No.	-
9	Check that the safety measures has been taken before undertaking for the Road / Rail / River Xing jobs involving like wise stretches.	Yes/No.	
10	For rail or road crossing check whether written working plan is available at site with specific reference to safety e.g. local earthing, skilled & experience manpower, proper T&P, strength and height of scaffolding to maintain the required clearance etc.	Yes/No.	
11	Ensure that all the members and proper size of Nuts and Bolts of		

SN	Description of Activity	Feed back	Remarks
	lower section are fitted properly before erection of the upper section of tower is taken up.	Yes/No.	
12.	Check that the anti climbing devices are provided in the tower after erection job.	Yes /No.	
13.	Check that the danger plates have been provided.	Yes /No.	
14.	Check that only erection team members are allowed to stand near the tower while erection is in process and should wear the safety helmet / Safety Shoes.	Yes/No.	
15.	Working area of the tower has been demarcated during	Yes /No.	
16	Check that proper guying arrangement has been made. And also to see that proper size of the crow bars has been used which has been fixed at hard surface in case of sandy soil or loose soil.	Yes/No.	
17	Check that proper arrangement is made while lifting the tower members and fixing them at height i.e. Proper size and strength of the hook used for lifting the tower members.	Yes/No.	
18	Check sufficient numbers of guys are made while lifting the assembled cross arm and also avoiding use of single sheeve pulleys while lifting the assembled cross arm / heavy load.	Yes/No.	

*C. CONDUCTOR STRINGING:*

SN	Description of Activity	Feed back	Remarks
1.	All drivers and plant operators are holding the valid driving license.	Yes/No.	
2.	Check that the permit has been obtained from the Competent Authority for stringing of conductor while crossing through Road / Rail / River / Venerable areas etc. ( Where necessary )	Yes/No.	
3.	Check that required painting has been made on tower falling in the vicinity of aviation zones. (Where necessary.)	Yes/No.	
4.	Check that all safety measures have been taken during stringing of conductor crossing the EHV / HV / LT lines (Earthing of existing lines etc.)	Yes/No.	
5.	Ensure that proper size of Nuts and Bolts is rigidly tightened and punching / tacking / tack welding is done in towers before undertaking stringing j ob.	Yes/No.	
6.	Ensure that proper scaffolding arrangements made during stringing of conductor (While Road Xing / Power Line Xing etc.	Yes/No.	
7.	Ensure that all members are fitted in tower before undertaking conductor stringing work.	Yes /No.	
8.	Check that the back filling of the foundation has been done as per specification.	Yes/No.	
9.	Ensure that the discharge rod is electrically tested before use.	Yes /No.	
10.	Stringing Machine / Tension pullor Machine are properly earthed.	Yes/No.	
11.	Check the brake arrangement of the TSE Machines is working.	Yes/No.	
12.	Ensure that the pulleys used before conductor stringing has been checked for adequate strength / proper size (diameter), also in case of open type pulleys proper locking arrangements like providing of Safety Pin is made Ensure for copy of test certificate for all the lifting machines and tackles.	Yes/No.	

SN	Description of Activity	Feed back	Remarks
13.	Ensure the ropes used before conductor stringing has been checked for adequate strength / physical condition (Free from break of strands and knots etc.	Yes/No.	
14.	Check that the lifting tools and tackles i.e. Winch Machine, Chain Pulley Block, Trifor, D - Shackle etc. are in healthy condition and has been tested periodically. (Attach copy of test certificate).	Yes/No.	
15.	Check for the brake arrangement of the Drum reel of conductor during laying / paying out of conductor.	Yes /No.	
16.	Check that proper communication facility is available at site during of stringing of conductor (If required )	Yes/No.	
17.	Whether the tower has been permanently earthed.	Yes/No.	
18.	Check that Sag Board is provided at two locations.	Yes /No.	
19.	Check that the Sag Board arrangement is made by the experienced / trained persons.	Yes/No.	
20.	Check approved Sag tension chart is available and followed at site.	Yes/No.	
21.	While clamping of conductor / EW to be done, check for earthing.	Yes/No.	
22.	Ensure sending signal to puller to stop when last layer of conductor / EW being pulled.	Yes /No.	
23.	Check tension applied on the dynamo meter dial and check values with approved data.	Yes /No.	
24.	Before stringing starts check that the villagers do not come underneath the job of the concerned section.	Yes/No.	
25.	Only nylon or polypropylene ropes should be used during conductor stringing in vicinity of live overhead lines.	Yes/No.	
26.	Ensure that PTW has been taken from the concerned authority.	Yes/No.	
27.	Ensure that Winch, Pulleys etc. are properly earthed.	Yes/No.	
28.	For LT lines, whether special persons are posted at each point of isolation till return of permit (PTW).	Yes/No.	
29.	Whether the network of LT lines has been thoroughly checked and precautions taken Against inadvertent charging.	Yes /No.	
30.	Check that proper arrangement is made / available for development and use of a Portable Earthing and Short - Circuiting Devices which can be engaged and disengaged to and from the LT lines, keeping away from the LT lines, until all operations on the same are completed and all men and materials are removed from LT lines.	Yes/No.	
31.	Check the provision and proper positioning for the guying and back staying (Where necessary).	Yes/No.	
32.	Check demarcation of feeder is done for D/c Line.	Yes/No.	
33.	Ensure that all the insulator strings are thoroughly checked for availability and proper fixing of cotter / split pins before hoisting the same.	Yes /No.	

**General Points common for all activities during Excavation, Casting of Foundation**

**A. ERECTION OF TOWER AND STRINGING OF CONDUCTOR:**

SN	Description of Activity	Feed back	Remarks
1.	Check whether the contractor had procured required quantity of PPEs considering maximum numbers of erection gangs deployed at one time.	Yes/No.	
2.	Supervisors/ Workmen have been provided with required healthy PPEs, like Safety helmet / Safety Belts / Safety Shoes / Gum Boot etc. as applicable.	Yes /No.	
3.	Availability of First Aid Box with required medicines at site.	Yes/No.	
4.	Instruction register is available at site.	Yes/No.	
5	Ensure that Supervisor / Gang Leader always issues instruction to the Workmen before start of work.	Yes /No.	
6.	Ensure that supervisory staff from GETCO is available at site during construction.	Yes/No.	
7.	All driver and plant operators are holding valid driving license.	Yes/No.	
8.	Check the vehicle for rescue is available at site.	Yes/No.	
9.	Ensure engaged labour are aware of the job.	Yes /No.	
10.	Check that the unskilled labourers are not engaged in skilled	Yes/No.	
11.	Ensure that supervisor / workmen engaged in the field are aware of First Aid Techniques ( Such as in case of Electric Shock, Fall from the height, Snake bite and the person rescued from buried under the debris etc.	Yes/No.	
12.	Check for nearby Hospital / Doctor in case of emergencies	Yes/No.	
13.	While transporting heavy consignment of conductor / EW drums from central store to site by the use of Cranes, Truck, and Tractor. The safety aspect for construction and failure of brake system of moving machinery is to be checked.	Yes/No.	
14.	At least one dry powder type of portable fire extinguisher shall be provided especially where explosive or blasting agents are used for excavation.	Yes/No.	
15.	Check the competence (Qualification / Experience) of supervisor / gang leader of contractor.	Yes/No.	

**REMARKS IF ANY:**

Signature	Signature	Signature
Name :		
Designation :	Name :	Name :
Representative of Contractor	Designation: GETCO Rep. from Site.	Designation: GETCO Rep. from RHQ.