INFORMATION OF THE

PROJECT DEPARTMENT

B.E.S.&T. UNDERTAKING

(Information mandatory under section 4 of Chapter II of
Right to Information Act, 2005)

CHAPTER II

(Right to information and obligations of public authorities)

4(b)(i) : The particulars of organization, functions and duties

The particulars of department:

Name of the department	Project Dept.
Address	2nd floor, Backbay Veej Bhavan, Gen. Bhosale Marg, Nariman Point, Mumbai 400 021.
Contact no. (Tel)	022-22822080 022-22048240 Ext. 555, 561

The functions and duties of Project Dept.

RESPONSIBILITIES AND FUNCTIONS:

- The division shall be concerned with the planning, designing and other technical work of the various projects of the Electric Supply Branch and shall be responsible for advance planning and systematic development of the E.H.V. network. The department is also responsible for any new project and adopting the same after studying technical and commercial viability for the improvement of the electric supply distribution system. The division is also responsible to execute in time, the various projects such as 110kV Receiving Substations, 22kV and 33kV Receiving Substations, 33kV changeover of Receiving Substations, Fire Fighting system etc. Further, obtaining of appropriate sanction of the General Manager and or of the Committee for all proposed projects and of the annual Capital Budget of the entire supply branch shall constitute the important responsibilities of Project Division.

- The division shall give necessary technical assistance to the executing departments in connection with various jobs in Receiving Substations.

- The division shall be responsible for preparation of specification and tender documents for all plant and equipment and special materials required for 110 kV, 33 kV and 22 kV Receiving Substations, scrutinising the tender received and recommending the same for acceptance. The division shall also be responsible for keeping a careful watch over the progress of manufacture of the equipment and paying periodical visits at the works during the process of manufacture of the equipment. It shall also ensure that the equipment on order is delivered at proper time and at proper location.

- The division shall also be responsible for satisfactory maintenance of all drawings, plans and allied records of all Receiving Substations and its equipments.

- The division shall be responsible for carrying out correspondence with Tata Power Company Ltd (TPC), SLDC, GCC and arranging co-ordination meetings in connection with bulk supply metering, termination arrangement of BEST's 22KV & 33KV feeders at TPC's supply points, arrangement of taking 110KV supply at various points and other related issues.

- The division shall be responsible for arranging the training of the staff of the Electric Supply Branch in India and abroad with a view to equip them with requisite knowledge of the equipment, job handling techniques necessary for efficient execution of the work etc.

4(b)(ii) : The powers and duties of its officers and employees:

The Project Department is headed by Divisional Engineer and the officers and staff on roll are as follows:

Designation	On Roll Staff (as on MARCH 2021
Divisional Engineer	1
Supdt.	2
Asst. Engr.	5
Chief D'man	2
AAO	1
Sup(P)	2
Sr.Steno(P)	1
Sr. D'man	0
Sr. D'man(P)	0
D'man	3
Sepoy	1
Nawghany	0
CL	1

The powers and duties of Divisional Engineer:

The Divisional Engineer Project shall be responsible for the overall supervision of the various activities of the Project Dept. The various activities include:

- Dealing with M/s. TPC (Bulk Power supplier), SLDC, GCC.
- Preparation of project reports pertaining to various projects of the Supply branch for System improvement.
- Co-ordination with various departments and outside agencies for smooth execution of various projects.
- Planning and development of electrical network to meet the present and future load growth and reducing distribution losses.
- Interaction with various suppliers for procurement of modern various cost effective equipments.
- Adaptation of new technologies in BEST system for improving reliability.
- Preparation of the Capital budget for the Supply branch.
- Arrange to procure various equipments for 33/22kV receiving substations.
- Arrange to procure various equipments for EHT (110kV and above) receiving substations.
- Overall administration of the Project Division.

II **The powers and duties of Superintendents:**

The Supdt. (Project) shall be responsible to the Divisional Engineer (Project) for the specific duties allotted to him out of the following:

- Economic studies of major projects.
- Planning and designing of EHT RSS.
- Study and adaptation of new technical developments of various equipments used in E.H.T. Substations.
- Preparation/revision of specification for EHT RSS as per the latest development in the technology.
- Procurement of various equipments for new EHT RSS.
- Procurement of various spares and equipments for addition and alteration in existing 110 KV RSS.
- Co-ordination with bulk power suppliers, viz TATA Power Company, SLDC.
- Identifying new RSS sites and load centers as per the load growth and load projection.
- Follow up with the various government/private agencies for taking over new RSS sites.
- Study and adaptation of new technological developments in various equipment related to 33KV/22KV RSS.
- Procurement of various new equipments for 33KV/22KV RSS.
- Preparation/revision of specification of equipments for 33/22KV as per the latest development in the technology.
- Preparation of schemes proposal for commissioning new receiving substations, obtaining comments from various related departments.
- Preparation of schemes proposal for addition and alteration of existing RSS, obtaining comments from various related departments.
- Follow up with the various departments for the smooth execution of the scheme.
- Procurement of 33kV cable jointing kits accessories.
- Load forecasting and future planning for 15 years.
- Periodic review of the load growth of the system vis-à-vis load forecasting.
- Preparation of capital budget estimates for various activities related to new RSS, addition/alteration in existing RSS.
- Compilation of capital budget estimates of complete supply branch.
- Subject studies for system improvement and troubleshooting such as equipment failures, harmonics, earthing system, power factor improvement, reduction of distribution losses etc.
- Co-ordination/meetings with bodies/committee like grid co-ordination (GCC), SLDC, WRLDC, TPC etc.
- Connection applications to STU for availing EHV/HV connection.
- Reply to concerned MCA queries.

- Replies to concerned starred/unstarred questions from State Assembly, Rajya Sabha/Lok Sabha.
- Overall in charge of drawing section.
- Preparation of Project reports for capital expenditure (DPRs) for submitting to MERC and replying to queries raised by MERC;
- Reply of Capex of each quarter to MERC.
- Preparation of departmental administrative reports.

III **The powers and duties of Assistant Engineers:**

The Assistant Engineer (Project), under the technical guidance of Supdt (Project) shall be responsible for the specific duties allotted to him out of the following:

- Procurement of various equipments for new EHT RSS.
- Procurement of various equipments for addition and alteration in existing 110KV RSS..
- Failure analysis of the equipments procured
- Studying of received TC and NOC cases from Planning Dept. for equipment of RSS/ 33/0.415kV DSS and 33kV HT room to meet consumer's development load.
- Monitoring of performance of equipment in service and taking corrective actions.
- Subject study of the various equipments as per the latest technological development and BEST's requirements alongwith Supdt. For system improvement.
- Advising for scrapping of equipments.
- Follow up with various Govt./private agencies for taking over new receiving substation sites.
- Preparation of layout of new RSS and follow up with Civil Engineering Dept. for the preparation of building drawing and thereafter progress of the civil work of the receiving substation.
- Preparation of cable laying and equipment installation schemes proposals for commissioning of new RSS and obtaining comments from executing and user depts.
- Preparation of detailed schemes after incorporating comments from various departments and obtaining Management's sanction.
- Preparation of schemes for diversion of cables necessitated due to infrastructural projects such as overhead underground subway road widening/concreting etc.
- Preparation of cost estimates for various schemes and obtaining necessary management's sanction and intimation of schemes for execution.

- Work out requirements of 33kV XLPE/PILC/11kV XLPE and control cables as per proposed work and procurement of cables such as 33 KV XLPE/PILC, TR XLPE & water retardant XLPE 11KV XLPE and control cable. Preparation of specification / revision of specification.
- Procurement of 33KV cable protection cover (RCC tiles).
- Procurement of 33KV switchgears for new receiving substation and for addition and alteration of existing receiving substation.
- Procurement of 11KV switchgears for new receiving substation and for addition and alteration of existing receiving station.
- Procurement of integrated numerical control alarm and relay for new receiving station and for addition and alteration of existing receiving station.
- Detailed study of numerical relays.
- Procurement of power transformer for new receiving substation and for addition and alteration of existing receiving substation.
- Procurement of various types of 33KV cable jointing kits and accessories such as conventional joints, heat shrinkable joints, cold shrinkable joints, tapex joints etc.
- Tendering for repairs/reconditioning of power transformers.
- Preparation of remodeling schemes of existing RSS and 33KV changeover and obtaining management sanction.
- Procurement of battery and battery chargers for new receiving substation and for addition and alteration of existing receiving substation.
- Procurement of HV capacitor, reactors, RVT's and neutral link for new receiving station and for addition and alteration of existing receiving substation.
- Procurement of auto fire fighting system for new receiving substation and for addition and alteration of existing receiving substation i.e. water spray (mist) type AFF system and total flooding CO2 type AFF system. Procurement of auto fire extinguishing system for the protection of EHV cable at 110kV RSS.
- Follow up with related depts. for smooth execution of schemes.
- Collecting, compiling and analyising data of feeder and power transformer loads of all the receiving substations for the purpose of load forecasting and future planning.
- Arranging data from various executing departments of the capital work proposed to be executed for the preparation of budget.
- Preparation of departmental administrative report.
- Corresponding with Govt. of India agencies such as Power Finance Corporation, Accelerated Power Development & Reforms Projects Cell for arranging grants/financial assistance for the Undertaking.
- Follow up with related departments for execution of the schemes covered under various Govt. of India financial assistance schemes.

- Generally, Assistant Engineers are required to carry out following activities for procurement of each equipment.

  (a) Finalization of specification/preparation of specification/revision of specification.

  (b) Sending indents to Stores Dept.

  (c) Evaluation of the various offers.

  (d) Tender recommendation.

  (e) Drawing approval.

  (f) Arranging inspection/testing at the factory.

  (g) Delivery schedule.

  (h) Follow up with the firms for adhering to the delivery schedule.

  (i) Follow up with the firm during installation and commissioning of equipments on site.

  (j) Monitoring guaranteed technical performance.

- Preparation of site plan for new RSS.
- Network study for requirement of RSS.
- Studying the requirement of RSS (NOC & TC cases).
- Obtaining sanction for civil modification, electrification of RSS, provision of AC in control room, provision of main supply and standby supply etc.
- Verification of building drawing, electrification drawing for giving token of approval, obtaining approval of electrical inspector for layout of new RSS.
- Site visit to new RSS for assuring progress of the building as per our requirement/site taking over formalities.
- Work out requirement of various 33kV cables jointing kit/ 11kV termination kit as per proposed work.
- Preparation of specification for new equipment and revising the old specification to cope up with new technology.

IV The powers and duties of Assistant Admn. Officer:

He shall be responsible to the Divisional Engineer. He shall supervise the work of the clerical staff and stenographers working in the department. He shall be responsible for the following:

- Keeping a check on organizational matters pertaining to the division.
- Studying/co-ordinating/implementing the recommendations made by various Departments in administrative matters.
- Preparing departmental budget estimates and administration reports.
- Preparing establishment schedule of the division.
- Obtaining administrative sanctions.
- Making arrangements for deputation visits etc.
- Dealing with staff matters and maintaining staff records, files and other confidential files of the division.
- Initiating and following up procurement of various requirements of the division.
- Maintaining inventory of office equipment.
- Obtaining way leave permissions from various parties.
- Recommending leave of staff under his charge.
- Scrutinizing notes and letters dispatched from the department.
- Maintaining the budgetary control of different budget heads.
- Maintaining statistical records.
- Reviewing the departmental manual.
- Maintaining general up-keep and cleanliness of the division.
- Maintaining Imprest Cash & Register.
- Follow up the files with other Dept.

V The powers and duties of Chief D'man:

- Supervision to Sr. & Jr. D'man.
- Distribution of jobs to the D'man.
- Site visit for existing RSS – Addition & Alteration work as well as equipment replacement.
- Site visit for proposed RSS – Checking & observation of cable entries, openings etc.
- Site take over from party alongwith another department engineers.
- Checking of L/PRO, S/PRO, ED/PRO, M/PRO, SK/PRO, single line diagram etc.
- Checking of electrification drawing and comments if any.
- Checking of party's drawing and comments if any.
- Intimation of all schemes to DECO as well as other concerned departments.

- Taking sanction and purchase of drawing office stationery and distribution to the D'man.

VI **Duties of Sr. D'man:**

- Supervision and guidance to the D'man in preparation of drawings such as L/PRO, S/PRO, ED/PRO, M/PRO, SK/PRO, single line diagram etc.
- Checking of civil drawings received from Civil Depts. / party's architect.
- Checking of all type of drawings drawn by the D'man.
- Maintaining and checking of drawing registers serially.
- Arranging of drawings/ammonia prints from other departments.
- Site visit for earthing details for existing and proposed RSS.
- Site visit to existing RSS for updating layouts.

VII **Duties of D'man:**

- Preparing of L/PRO, S/PRO, ED/PRO, M/PRO, SK/PRO, single line diagram etc.
- Preparing schematic and radial diagram for network study.
- Coloring of prints.
- Folding of prints.
- Site visit for diversion of 33kV cables.
- Site visit for proposed 33kV cable laying.
- Worked on G-Technology at Veej Bhavan, Backbay for proposed M/PRO.
- Making entries of all drawings in drawing register properly.
- All above mentioned drawings are prepared either in Autocad Software (latest version) or manually.

VIII **Duties of Clerk:**

- Filing & finding references (Technical as well as Administrative).
- Preparation of deputation bills and collecting data.
- Obtaining sanctions for expenditures.
- Initiating OB memos, bill vouchers, salary bills etc.
- Following up cases with Govt. Railway & other bodies.
- Preparation of monthly reports viz. pending of tender recommendation & material inspection, absenteeism memo of A & B Grade Officers, accidents reports, MIS reports, staff allocation vacancy.
- Quarterly and annual reports viz. verification of registration of Books of Motor Cars, Capital/Revenue Budget, Confidential reports, renewal of bus passes, inventory entries.
- Issue of briefcase of officers, medical reimbursement of employees/officers.
- Taking over duties, change in name and address.

- Dispatch of leave forms, LTA forms & encashment forms.
- Issue of soaps, napkins & Clothes to Officers & Staff.
- Preparation of gate passes.
- Preparation of purchase forms.
- Annual requirement of diaries, calendars, desk calendars & printing of stationary & its follow up with Stores & Sr. AOS.
- All dispatch work.
- Maintaining leave record of staff.
- Recoupment of stores & stationary materials.
- Issuing stationery and clothing.
- Maintaining of various types of registers.
- Checking estimates and maintaining the register of new substations.
- Maintaining statistical records.
- Maintaining office files.
- Following up training programs.
- Reviewing of filing index.
- Preparation of budget estimates.
- Preparation of administration reports.
- Controlling budget grants.
- Replying M.C.A. queries.
- Dealing with cases pertaining to work done for outside parties and sale/hire of equipments.
- Looking after general up-keep and cleanliness in the division.

IX **Duties of Stenographer:**

- Taking dictation from officers of the Dept. and transcribing it.
- Checking and comparing typed matter.
- Giving work information to AAO.
- To prepare soft copy of all specifications of all the equipments.
- Regular typing work of technical `A' Grade Officers

X **Duties of Sepoy & Nawghany**

- Arranging the prints of drawings and notes.
- Folding of the drawings.
- Carrying dispatch to the various departments of the Undertaking.
- Carrying dispatch to the offices of the other utilities/companies.
- Up-keeping and cleaning the furniture in the office.
- Mopping and dusting.
- Bringing materials from Stores and other departments.
- Taking out reference files and keeping them back at the proper place.
- Collecting and distributing internal papers from the trays.
- Attending telephone calls.
- Attending to the visitors and giving them the necessary guidance.

4(b)(iii): The procedure followed in the decision making process, including channels of supervision and accountability.

PROCEDURAL WORKING OF PROJECT DIVISION

- This chapter is intended to give a general idea of the overall working of the Project Division and to assist the officers and staff to follow the procedure connected with the activities of the department. The methods to be adopted for different types of works indicated herein shall serve as guidelines for the staff and shall not be deemed to be complete in all respects.

RECEIVING SUBSTATIONS (EHT & 33KV)

- The planning and establishing of RSS involves locating suitable plots for establishing EHT or 33kV substations in our area of supply at different load centers. The locations are decided taking into account the load requirements, availability of plots, techno economic feasibility considering rebate in tariff for EHT Receiving Substation, reduction in losses after 33kV change over, meeting the load growth in and around the area, efficient management of the load transfer, shut downs etc.

- The design of EHT Stations is related to the requirement of load and dimensions of the plot. Main parameters are given below:

i) Equipment
ii) Land & Building
iii) Mode of Utilization
iv) Manpower
v) Capital Outlay

i) <u>EQUIPMENT:</u>

The requirement of plant and equipment shall be assessed on the basis of requirements to be fulfilled from the stations. While deciding the mode of equipment it shall take into consideration the various factors such as changes in technology and techniques, availability of the equipment, import content etc. Before deciding the equipment it is necessary to collect data information from various sources and then adopt the relevant equipment to suit our purpose and meet the ultimate requirement. By equipment it means all items such as switchgears, transformers, cables, control panels, etc.

ii) LAND AND BUILDINGS:

The finalization of land and buildings shall be done in consultation with the Civil Engineering Department. While deciding the requirement of 110kV Substations to meet our future needs, it is required to study in detail the load requirements in the island City of Mumbai, pattern of load growth etc.

iii) MODE OF UTILISATION:

Taking into consideration the geographical locations of TATA's main station i.e. Backbay, Carnac, Parel, Mahalaxmi & Dharavi, the locations of our main stations are decided. At some of the stations, the requirement is only to have 110kV to 11kV transformers to meet the loads in the neighbouring area. But some of the locations are required to have 110kV/33kV transformers so that 33kV/11-6.6kV substations can be established in the area to strengthen the network. Supply of this 33kV substation is given from the main 110kV Substations established in the area. The Project Dept. shall prepare a project plan to give these details. The economics for establishing such stations is also worked out by the Project Division.

iv) MANPOWER:

Manpower shall be related to the various types of functions required to be performed. The categories of man and their number depends upon the quantum of the work load and its type. It is necessary to prepare a list of activities and sub activities for each function and ascertain the type and number of men required for carrying out these activities by fixed standards. After this is done, the increase in work load due to expansion shall be worked out and the total requirement of manpower shall be computed for the entire period of the plan. The requirements shall be presented in a tabular form giving the categories and number to be added each year as well as the cumulative total under each category. Care shall be taken to check the fixed standards of work taking into consideration change in organization and methods. An organization chart showing the levels of responsibilities and number of personnel shall be drawn to depict the ultimate picture at the end of the plan period.

v) CAPITAL OUTLAY:

The requirement of capital for equipment, land and buildings, manpower shall be estimated at the prevailing rates allowing for variation in rates for the entire plan period. This shall be presented in a tabular form showing breakup under each head year wise and indicating the quantum of foreign exchange requirement separately. The capital outlays shall be compared with the estimated revenue so as to trim the expenditure suitably whenever warranted.

FOR THE PREPARATION OF LAYOUT PLAN:

- The 110kV Substations shall be of completely indoor type that means the 110kV switchgear, power transformer, 11kV switchgear etc. are to be housed in the building. While preparation of layout for 110kV Substation the following requirements shall be carefully considered and the preliminary layout drawings are prepared. While preparing the preliminary layout plan it is necessary to estimate the dimensions required for the various type of equipment to be installed in the station. The location of the various equipment rooms are required to be properly chosen considering erection, maintenance and ventilation aspects. The layout drawings shall indicate:

a) Control room
b) 110kV switchgear room
c) 33kV switchgear room
d) 11kV switchgear room
e) Battery room
f) Transformer bays
g) Capacitor reactor room
h) Automatic Fire Fighting Equipment
i) Station Service Termination
j) Communication Cable Termination
k) Rest room
l) Store room
m) Cable room
n) Sanitary block
o) Lighting

a) <u>CONTROL ROOM:</u>

The layout of the panels shall be such as to allow unrestricted light in the room taking into account future extensions if any. The control rooms shall be air-conditioned to make them dust proof and to maintain/control the temperature inside the room. This room shall be located centrally with respect to the room that are provided for major equipments such as 110kV, 33kV, 22kV, 11kV switchgear, power transformer, etc. The control cables leading to the control room from various equipment shall be installed by using suitable size cable trays. While preparing the drawing, slots or openings in the slabs shall be indicated at proper locations and the number of slots shall be adequate in number. To have proper effect of air-conditioning it is necessary to reduce the volume of the control room to a minimum by providing false ceiling and false floor.

b) 110KV SWITCHGEAR ROOM:

For indoor Substations it is necessary to install SF 6 (Sulphur Hexaflouride) Gas Insulated Metal Clad Switchgear which is ideal for indoor stations being very compact and safe to operate the height of this switchgear room from the ground level shall be at a minimum level so that the installation of the switchgear becomes easier. To facilitate installation of the switchgear it is preferable to provide an opening in the side wall having dimensions 2 mtrs. x 4 mtrs. through which the switchgear bays can be taken inside the room. After transporting the switchgear the opening shall be breaken up to make the switchgear room dust proof as far as possible. It is preferable to have a bus duct connection between the transformer and switchgear and hence location shall be chosen bearing this factor in mind.

c) 33KV SWITCHGEAR ROOM:

This room shall be preferably be located on the ground floor to facilitate installation of switchgear as well as cables. It is also preferable to have a bus duct connection between transformer and switchgear and location of the room shall be chosen accordingly.

d) 11kV SWITCHGEAR ROOM:

As several cables will have to be terminated in the station it is preferable to have this switchgear on the ground floor only. Instead of trenches behind the switchgear to lay cable it is necessary to have either stilt or cable room for the cables.

e) BATTERY ROOM:

The battery room shall be adequate in size to install station battery. One wall of this room shall face open space so that exhaust fan can be fixed about 1.2 mtrs. above the floor of the battery room. The room shall be sealed from the direct sunlight. Special type of flooring shall be provided in the room so that it will not get affected by acid.

f) TRANSFORMER BAYS:

The transformer bays shall be located near to the road as far as possible to facilitate movement of the transformers. To provide proper ventilation to the transformer it is desirable to have chimneys and cross ducts in the transformer bays. The transformers shall be installed at a height of not less than 1 mtr. From the ground level to provide proper inlet for the air. It is preferable to have a soak pit just below the transformer to avoid a separate sump well for the transformer

oil. The transformer shall be installed on rollers to facilitate easy movement and installation. A 5 Ton capacity chain pulley block shall be provided in the transformer bay at suitable height for handling the accessories of the transformer. The height of the transformer bay shall be adequate for removal and fixing of accessories of the transformer, but the height shall not be provided for lifting the core and winding of the transformer. An opening for the transformer bays on the road side shall be provided of adequate size so that when installation of the transformer is done the opening can be bricked up.

g) CAPACITOR REACTOR ROOM:

Dry/Cast resin reactor shall be used for capacitor banks. These banks shall be installed in a separate room and if the room is provided on the upper floors proper facility for lifting the reactor shall be provided in the station. The ventilation of the room shall be sufficiently good.

h) AUTOMATIC FIRE FIGHTING EQUIPMENTS:

The automatic fire fighting equipments shall be provided for the transformers only as 110 kV switchgears, 33kV switchgears, 22kV switchgears and 11kV switchgears shall not have any fire hazard as oil is not used in modern type of switchgears. It is preferable to use mulsifier water system for transformer bays. However, if it is not possible to make a provision for adequate size of water tank, CO2 fire fighting system shall be used.

i) STATION SERVICES TERMINATION:

This shall be located at a convenient place preferably at the main entrance. Duplicate service shall be provided and it shall be located near the main service. A changeover switch shall be provided to facilitate easy changeover of the supply. The various fittings comprising the station shall be enclosed in a metal cabinet which shall be vertically mounted on the wall.

j) COMMUNICATION CABLE TERMINATION:

The communication cable shall be terminated on a tag block mounted on a wall preferably near the S.R.C. and shall be covered by a wooden cubicle.

k) REST ROOM:

This room shall be near to the control room with adequate facilities such as hot plate, lockers, tables and chairs etc.

l) STORE ROOM:

It is preferable to have two store rooms for each station. For storing heavy equipment the room shall be located on the ground floor itself, but for storing of small components and parts etc. this room can be on upper floors.

m) CABLE ROOMS:

To facilitate proper laying of power cables it is necessary to have either a cable room below the switchgear rooms or stilts below these rooms. If the cable room is provided below the switchgear rooms adequate number of leading in tubes shall be provided in the basement walls. With the provision of cable room or stilts below the switchgear rooms the grouping of the cables inside the station is avoided and fire hazard is minimized. This also increases the current carrying capacity of the cables.

n) SANITARY BLOCK:

Two sanitary blocks shall be provided in the station. One for the use of R&M staff and one for the use of shift staff. The sanitary block for the shift staff shall be provided on the same floor where control room and rest room are provided while the sanitary block for the R&M staff shall be preferably provided on the ground floor.

o) LIGHTING:

Lighting in the control room shall be adequate and indirect lighting shall be provided in the control room to avoid glare. Emergency DC lights of adequate number shall also be provided in the control room. In the transformer bays it is preferable to have one Mercury Vapour Lamp in each bays to provide proper lighting. In addition to mercury sodium vapour lamp sufficient number of tube lights shall be provided on the side walls of the transformer bays. 2 or 3 emergency DC lights shall be provided in each bay. Two numbers of 3 phase metal switches shall be provided in each bay. Similarly in other rooms, such as 110kV switchgear room, 33kV switchgear room, 11kV switchgear room, compressor room, battery room etc., sufficient number of light shall be provided. Similarly DC lights shall also be provided in these rooms. It is also necessary to have DC lights in the staircase of the station to provide emergency light in the staircase.

33KV CHANGEOVER:

- M/s. TEC are making 33kV supply available at their Backbay, Carnac, Mahalaxmi, Parel & Dharavi Receiving Station. To avail the advantage of this supply it was decided to upgrade the intake voltage of 22kV substations at our existing Receiving Substations. As a policy, it has been

decided that our supply intake voltage of all the Receiving Substation be changed over to 33kV depending upon the availability of 33kV feed from M/s. TPC or from our own 110kV Substation.

- To effect the changeover in the existing stations it is necessary to replace 22kV switchgear by 33kV switchgear; if the existing switchgear is not suitable for 33kV operation. Similarly, the power transformers are also required to be replaced by 16 MVA, 33kV/11kV transformers. By changing over the voltage from 22kV to 33kV the capacity of the existing cable between TATA's Receiving Stations and our station increases by 50%.

LOAD FORECASTING AND PREPARATION OF 5 YEAR AND 20 YEAR PLANS

- In order to plan our electric supply network and to make various schemes for enhancing the capacities of cables and equipments, we must know the quantum of load expected to come up in the immediate future as well as in the next 15 to 20 years. Accordingly, various short term as well as long term plans are prepared for meeting the load requirement.

- Peak demand and energy usage of an electric utility grow based on the following :

- Addition of new customers: Load will increase if new constructions take place and more and more new customers come forward for electric supply.

- New uses of electricity: Existing customers may add new appliances or replace the existing appliances with improved devices that require more power, thus increasing the demand for electricity.

- Mill Land Development: The textile mills in Mumbai city have closed down and the mill land is being developed for commercial IT projects, residential colonies for which the load requirement is huge.

- Load forecasting is used as a planning tool for the development of the system. Since the load growth in different areas vary differently, area-wise load growth is considered for the planning purpose. In this method, the peak load is predicted by extrapolation method by using the past data of peak loads of various Receiving Substations in the area. Based on the projected load and the existing peak load of Receiving Substations, the 5 year and 20 year plan for augmentations in the existing network and commissioning of new Receiving Substations is prepared.

ESTABLISHING 33KV AND EHT RECEIVING SUBSTATIONS:

- The requirement of establishing a 33kV and EHT Receiving Substation is decided based on the load growth expected in the area. Accordingly, Project Department negotiate with various govt and private agencies for a piece of land to establish a Receiving Substation. Generally we require a minimum plot area of 900 sqmtrs for a 33kV RSS and 2000 sqmtrs for 110kV RSS. The plot for the RSS can be materialized through following ways:

- Planning & Customer Care Departments receive applications for electric supply for new developments or for additional loads. As per the procedure order no. 90C, if a plot area under development is more than 10000 sq.mtrs. or if the load requisitioned is more than 3000kW, the case is referred to Project Department to study the requirement of RSS or 33/0.415kV DSS or 33kV HT room in the area. If it is necessary to establish such infrastructure then Project Department initiates the negotiations with the party to provide a space for RSS.

- In the 20 year planning of MCGM, BEST is asked to inform our requirement for plots for Receiving Substations, Bus Depots etc. Accordingly, Project Department advises our Civil Engineering Department to reserve plots at various locations as per our requirements.

- Project Department also follows up with Ward Officers of the respective areas where the need for establishing a Receiving Substation is more. In this case, our Customer Care Department is also informed to process the requisitions taking into account this requirement.

- After successful negotiations, the taking over of the plot and finalization of the Lease Agreement is done by our Civil Engineering Department.

- Project Department then prepares the Layout plan for the proposed RSS and the same is sent to Civil Engg Dept for preparation of the Building Drawing. The Civil Engg. Department then initiates the proposal for the construction of the structure.

- While the Civil Engg. Department does the work of Construction of the building, Project Department prepares the scheme for 33kV cable laying and commissioning of the RSS. Also Planning Department is informed to prepare the 11kV outlet scheme for the RSS.

PROCUREMENT OF EQUIPMENTS

Tendering procedure at BEST Undertaking:

- Indent is forwarded to MM Dept. along with copy of specification. BEST adopts the Quality and Cost Based System (QCBS) for procurement of any equipment. The procurement of equipments required for execution of any schemes is through a public tender process.
- In some vital and critical major items, two envelope bids system is followed in which offers are invited in two separate envelopes one containing Techno-Commercial Bid and other containing Price Bid.
- Techno Commercial Bid consist of guaranteed technical particulars and other technical data of the equipment along with all commercial conditions such as payment terms, delivery, validity, taxes and duties applicable such as Excise duty, Central Sales tax against `C' Form / VAT, Octroi, period for submission of drawings, prototype etc. except price, freight, insurance and unloading charges etc. Technical data contains details of manufacturing unit, audited statement of annual turnover, list of past supplies, latest Type Test Certificates for equipment, performance certificates from State Electricity Boards / Utilities, list of plant/machineries & testing equipments indicating their ratings and makes, for carrying out all routine/acceptance tests, details of raw material suppliers, quality control measures, drawings (equipment as well as circuits),details of local representative, if any etc.
- There are no restrictions imposed on tenderers who quote against the advertised tender. This is creating problem in some vital major items. Few small firms/manufacturers quote at lower rate even though they do not have capacity/infrastructure to supply such vital material. Thus when order is placed on such firms, it becomes difficult for them to supply the quality material or to maintain the delivery schedule. Therefore in case of some vital & critical major items, specific “Minimum Turnover limit” clause for previous two consecutive financial years is introduced in the tender documents and the offers of only such firms, whose turnover is more than specified limits are considered for evaluation. The firms are asked to prove their claim of turnover by way of certificate from Chartered accountant or by producing a printed copy of their annual Report. The firms are asked to submit the detailed/credential report in a specific format for the scrutiny & assessment of their technical & financial capabilities to meet Undertaking’s requirement. Technical suitability of the tenderer is decided on guaranteed technical particulars and other technical data of the equipment. The MM Dept. forwards the technical bid to Project Dept. The department evaluates/studies and forwards technical suitability. The price bids of these suitable tender are opened.

- Price Bids contain only Prices, such as Ex-Works Price per unit, Freight, Insurance, Unloading, etc.

- The envelopes containing Price Bid are opened only in case of those tenderer whose Techno-Commercial Bids are found suitable.

- To have an alternative source of supplying order to cope up with increased consumption of material during the fair season and to avoid a situation where day to day work come to standstill due to non availability of material, the bulk quantity is divided into two lowest acceptable regular suppliers in case of some vital and critical major items ,with certain norms of price variation percentage approved by the management.

  In order to achieve further economy on material cost , recently we have introduced 'Rebid – Matching Rates' system wherein tenderers are allowed to match the gross rates with the lowest acceptable Offer (LAO) within specified interval of approximately 7 days after opening of the tender (price bids).

- To accelerate the tendering process, we have introduced 'E – Tendering' system in the BEST Undertaking .The Tenderers are now able to view, download and upload their tender/bids from our website. Tenderers are expected to benefit from this system as all activities related to tendering are possible at a click of the mouse button from their own office location, thus saving their valuable time and efforts. The tenderers can upload their Techno-Commercial and Price Bids through the E-Tendering system. The system is Eco friendly, User friendly and has many self-explanatory features.

- All the orders are placed on the lowest suitable offers with satisfactory past performance and meeting the technical norms.

- In-house senior technical and financial personnel monitor the whole process of tendering and procurement. For all tenders above Rs. 10 lakhs, final approval is taken from the BEST Committee for placing the order. As such there is total transparency in-built in the procurement process of BEST Undertaking.

Co-ordination with M/s. Tata Power Co. Ltd. (TPC)

- At present BEST is purchasing all its power requirement from M/s.Tata Power Co. Ltd. Project Division co-ordinates various activities/issues pertaining to TPC. Main issues with M/s. TPC are the following:

1. Co-ordination meeting of concerned departments of BEST and TPC.
2. To co-ordinate between Construction Dept. and TPC for smooth execution of schemes.
3. To co-ordinate TPC with MRE Dept. regarding relay setting, metering etc.
4. To co-ordinate for 33kV change over and for allocating suitable cubicles for new RSS after getting STU approval.

4(b)(iv) The norms set by it for the discharge of its functions

N.A.

4(b)(v) The rules, regulations, manual and records held by it or under its control or used by its employees for discharging functions:

1. Service Regulation (S.R)
2. Standing Orders (S.O.)
3. Indian Electricity Act, 2003
4. Departmental manual

4(b)(vi) The statement of the categories of documents that are held by it or under its control:

(A) Registers maintained in Project Dept.

1. Inward Register
2. Outward Register
3. Leave Register
4. Imprest Register
5. Officer and Staff Attendance Register

(B) Files & Documents maintained in Project Dept.

1. Correspondence
2. Stores
3. Administration
4. Publication
5. Subject Study
6. Planning
7. Equipments
8. Order
9. RSS
10. Tender

4(b)(vii) The particulars of any arrangement that exists for consultation with or representation by the members of the public in relation to the formulation of its policy or implementation thereof:

N.A.

4(b)(viii) A statement of the boards, councils, committees and other bodies consisting of two or more persons constituted as sits part or for the purpose of its advice, and as to whether meetings of those boards, councils, committees and other bodies are open to the public or the minutes of such meetings are accessible for public:

N.A.

4(b)(ix) A directory of its officers and employees:

As on MARCH 2021

Sr. No.	Name	Designation	Grade	P.S.No.	Ch.No.
1	Shri A.R.Talegaonkar	Div.Engr.	A-3	122/01	213815
2	Smt M.K.Daware	Supdt.	A-4	122/01	215577
3	Shri J.P.Dhodi	Supdt.	A-4	122/01	217107
4	Shri B.R.Bhole	Asst.Engr.	A-5	122/01	215723
5	Shri V.S.Gugnani	Asst.Engr.	A-5	122/01	215352
6	Shri L.S.Patil	Asst.Engr.	A-5	122/01	215630
7	Shri G.D.Pise	Asst.Engr.	A-5	122/01	211765
8	Shri R.S.Kadam	Ag.Asst.Engr.	A-5	139/02	212775
9	Shri A.P. Gore	CD	GGV	122/01	215222
10	Smt.S.S.Narvekar	CD	GGV	122/01	211400
11	Shri D.G.Kamath	AAO	AGVIII	122/01	212547
12	Shri S.R.Sawant	Supervisor(P)	AGVII	122/01	214264
13	Shri S.S.More	Supervisor(P)	AGVII	122/01	214360
14	Shri B.E.Sanyasi	Sr.Steno(P)	AGVII	122/01	215818
15	Shri H.D.Naik	D'Man	GGIII	122/01	216857
16	Smt.A.A.Mohite	D'Man	GGIII	142/01	217594
17	Smt.V.N.Kuwalekar	D'Man	GGIII	142/01	216850
18	Smt.V.V.Gadhade	Sepoy	AGI	122/01	280832
19	Shri A.V.Salve	CL	----	----	600675

4(b)(x) The monthly remuneration received by each of its officers and employees including the system of compensation as provided in its regulations:

Payment received as per pay sheet for the month of February 2021.

Sr. No.	Name	Designation	Basic Pay	Monthly Remuneration (Basic + Allowances) (Rs.)
1	Shri A.R.Talegaonkar	Div.Engr.	84,050/-	1,12,756.00
2	Smt M.K.Daware	Supdt.	67,950/-	1,06,348.00
3	Shri J.P.Dhodi	Supdt.	50,650/-	66,373.78
4	Shri B.R.Bhole	Asst.Engr.	58,050/-	80,771.79
5	Shri V.S.Gugnani	Asst.Engr.	59,400/-	89,580.03
6	Shri L.S.Patil	Asst.Engr.	58,050/-	87,733.56
7	Shri G.D.Pise	Asst.Engr.	81,500/-	1,21,580.00
8	Shri R.S.Kadam	Ag.Asst.Engr.	67,750/-	99,270.00
9	Shri A.P. Gore	CD	46,850/-	69,433.15
10	Smt.S.S.Narvekar	CD	55,000/-	81,954.67
11	Shri D.G.Kamath	AAO	48,250/-	62,465.00
12	Shri S.R.Sawant	Supervisor(P)	39,335/-	56,914.56
13	Shri S.S.More	Supervisor(P)	39,335/-	48,903.56
14	Shri B.E.Sanyasi	Sr.Steno(P)	34,930/-	50,671.60
15	Shri H.D.Naik	D'Man	33,190/-	48,670.41
16	Smt.A.A.Mohite	D'Man	11,645/-	38,354.98
17	Smt.V.N.Kuwalekar	D'Man	33,855/-	49,577.94
18	Smt.V.V.Gadhade	Sepoy	25,800/-	37,474.86
19	Shri A.V.Salve	CL		

4(b)(xi) The budget allocated to each of its agency, indication the particulars of all plans, proposed expenditures and reports on disbursements made:

The budget allocation:

All information in respect to the budget allocation to the department is given in the budget estimate of the Undertaking.

The plan proposed:

The information in respect of plan proposed is available in the budget estimate of the Undertaking.

4(b) (xii) The manner of execution of subsidy programmes including the amounts allocated and the details of beneficiaries of such programmes.

N.A.

4(b) (xiii) Particulars of recipients of concessions, permits or authorizations granted by it:

N.A.

4(b) (xiv) Details in respect of the information available to or held by it, reduced in an electronic form:

N.A.

4(b) (xv) The particulars of facilities available to citizens for obtaining information including the working hours or a library or reading room, if maintained for public use.

The working hours on a weekdays from Monday to Friday excluding Bank Holidays of the department are from 9.00 a.m. to 5.00 p.m. (with 45 minutes lunch recess from 12.45 p.m. to 1.30 p.m). There is no separate arrangement for the library for the Project Dept.

4(b) (xvi) The names, designations and other particulars of the public information as may be prescribed; and thereafter updates these publication every year:

1. Shri A.R.Talegaonkar - Divisional Engineer (Public Information Officer)
2. Shri S.P.Makwana - Chief Engineer (Planning) (Appellate Authority)

4(b) (xvii) Such other information as may be prescribed:

The information pertaining to the department can be available with the Officers and or the staff of the department.