

ODISHA POWER TRANSMISSION CORPORATION LIMITED
REGD.OFFICE: JANPATH, BHUBANESWAR- 751022

UOI No.

/ 117

Dated

06.07.2024

To

ED (Central Zone)


OPTCL, Bhubaneswar.

Please refer to the Memorandum submitted by your branch which were placed vide Agenda Item No. 10, 16.8.18 for Consideration and approval of the board of directors of OPTCL in the 144th Meeting held on 20.06.20.24

Relevant extracts of the Board are appended/ enclosed below.

You are requested to kindly take action, if any, in issuing appropriate instructions/ office orders within seven days of receipt of this communication. A compliance report may please be furnished for placing the same in the next meeting for review by the Board.

Encl: As above


COMPANY SECRETARY

B. B. B.
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09.07.2024

**EXTRACTS OF MINUTES OF THE 144th MEETING OF THE BOARD OF
DIRECTORS OF ODISHA POWER TRANSMISSION CORPORATION LTD. HELD
ON 20.06.2024 AT 3.30 PM AT THE REGISTERED OFFICE OF THE CORPORATION
AT OPTCL TECH TOWER, JANPATH, BHUBANESWAR.**

Item-10: Approval for 1ST revised BoQ of work for “Construction of 2x500MVA, 400/220/33KV Gas (SF₆) Insulated Sub-station (GIS) with SAS and 1X125 MVar. (400 KV) bus reactor with control at Ersama, Paradeep. (ii) 400 KV AIS feeder bay extension with SAS and 2 nos. 80 MVar. (400 KV) line reactors with suitable NGR & its control (one dia) at 400KV New Duburi Grid S/S for connectivity with proposed GIS S/S at Ersama, Paradeep” in favour of M/s. BHEL.

ED (Central Zone) informed to the Board that the construction of 400KV GIS at Ersama has been awarded to M/s. BHEL through open tender. During execution of the work, there has been huge variation of quantities of materials/equipment in supply, erection and civil work which has resulted in substantial increase on certain items beyond contractual limit of 25% and also overall increase of project cost to the extent of 27.22%. Hence the proposal for amendment BoQ was placed on 141st BoD held on 12.02.2024. Looking at the large variation, the board advised OPTCL to constitute a cross region Sr. level interdisciplinary committee comprising of ED (Western Zone), CFO, CGM (CPC) and SE (Civil) to visit the project site, discuss with the field officers of OPTCL & executing agency and examine the bill of quantities based on ground realities. After detailed analysis the Committee will give a recommendary report on BoQ revision proposal and also contract price amendment to PSC and the Board.

Accordingly, the committee constituted for the purpose visited the site on 09.03.2024 and verified the approved LUP and other approved designs and drawings of project sites at Ersama and New Duburi. After detailed physical verification of the site, discussion with field engineers and the executing agency the committee has submitted a comprehensive report covering all aspects attributing to major deviations in supply and erection as mentioned below:

(i) Reasons for major increase in Supply

- Due to the increase of hall dimension all the associate items like lightening, ventilation, fire alarm, EOT crane, installation quantities were varied. Similarly, due to wind zone-VI structure weight is increased as per the approved design.
- Laying of Earth mat was considered for the entire S/s including future bay & treated earth pits were considered in place of non-treated earth pits in the periphery of the S/s 40mm MS rod & GI flat, earthing pipe quantities are increased as per the approved design & drawing.
- In 400KV Reactor dia, only one reactor GIS bay module is provided as per the contract. But to avoid outage in future, provision has been made for another reactor GIS bay module in Reactor dia.
- Station transformer layout drawing was modified & to be installed in separate place away from ICT to avoid any damage to ICT as such type of incident occurred at 400/220KV GIS S/s Meramundali-B. For which additional 66KV HT cable & 33KV equipment of higher BIL (more than 52KV) was proposed for station supply. As it is a new item the above price are not available in BOQ or cost data.
- 2nos. 420KV isolators with one earth switch & 4nos. of 245KV, isolators with one earth switch & CSD switch were proposed for additional safety of the line & GIS.

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- In 400 KV bay extension at New Duburi the estimate was framed considering I- type one & half Circuit Breaker arrangement with switchable line reactor but such scheme was not feasible as both the line will be entry to the S/s in one direction with space constraint so to avoid such issue D-type scheme has been adopted for which electrical & civil quantities are increased.

(ii) Major increase in Civil works

- After physical possession of the land from Govt. of 54.16Acr, contour survey was carried out for the entire land & soil test was carried out as per the site requirement.
- As proposed NH-55 is passing adjacent to the S/S land at Ersama where the land is 4m below the proposed road level. It was decided that FGL to be fixed at existing RD road level which is 1.8m (approx.) and filling is required for S/S area only. Accordingly requirement of borrowed earth is 150000cum against 18000cum as per the BoQ. Further, to retain the borrowed earth concrete retaining wall is required in switch yard area only.
- Boundary wall is considered for entire allocated land. Road, drain, cable trench are considered as per approved LUP & site requirement.
- Due to low SBC ($6T/m^2$) at 400/220KV GIS, pile foundation was suggested for construction of control room building, 400KV & 220KV GIS hall, all equipment foundation, ICT, reactor, column, quarters etc.
- The dimension of 400KV GIS hall was enhanced from 55m x 15.5m to 77mx15.5m & 220KV GIS hall was enhanced from 23.5m x 12m to 43mx12m to accommodate future 4 nos. of bay in 220KV & 400KV system as per the direction of Govt. of Odisha.
- PCC Laying for site surfacing is considered in 40% area of fenced boundary (210m x 285m size = 59850 sqm) as per Layout Drawing. Similarly Metal Spreading for site surfacing is considered in 40% area of fenced boundary (210m x 285m size = 59850 sqm) as per Layout Drawing.

The Committee in their report has also reckoned the facts that has contributed for variation of quantities in the project:

- The estimate was prepared considering following broad technical parameters:
 - Wind zone-V
 - Short circuit current level 50 KA.
 - Creep age 25mm/KV.
 - Galvanization thickness 610 gm/sqm.
 - Without acquiring the land for the Sub-station & assuming uniform surface of the proposed S/s land.
- LoA was placed basing on the following technical parameters:
 - Wind zone-VI
 - Short circuit current level 63 KA.
 - Creep age 31mm/KV for saline zone.
 - Galvanization thickness 910 gm/sqm.
 - Without considering isolators in 400KV incoming feeder & 220KV outgoing feeders.
 - 33KV equipment insulation level as per 36KV voltage class.

- Station Transformer to be installed near ICT & connected with tertiary winding of ICT in bare conductor.

The Board reviewed the Committee report item wise increase and decrease as submitted before it and noted that in the BoQ amendment proposal, the unit rates for the enhanced quantity within 25% of the BoQ are considered as per LoA rates and for quantity beyond 25% least price has been considered in line with the contract term. The revised cost implication in the BoQ amendment is as mentioned below:

(In Rupees)				
Description	LoA Price	Revised BoQ Price	Increase	% Increase w.r.t. LoA
Supply	1,67,33,67,951.97	1,83,32,34,803.64	15,98,66,851.66	9.55%
Electrical	4,72,53,645.17	6,20,24,677.76	1,47,71,032.58	31.26%
Civil	37,26,06,405.55	74,33,65,860.94	37,07,59,455.38	99.50%
Total	2,09,32,28,002.70	2,63,86,25,342.33	54,53,97,339.63	26.06%

PSC after going through the report of the Committee and being satisfied has recommended to the Board for approval of revised BoQ of Ersama project with an amended BoQ amount of Rs.2,63,86,25,342.33, which is 26.06% higher than the original LoA price Rs.2,09,32,28,002.70.

The Board after discussion, in line with recommendations of PSC, approved the proposal for 1st revised BoQ of the contract for "Construction of 2x500 MVA, 400/220/33KV GIS with SAS and 1X125 MVAr (400 KV) bus reactor with control at Ersama. (ii) 400KV AIS feeder bay extension with SAS (to be integrated with the existing SAS) and 2 nos. 80 MVAr. (400 KV) line reactors with suitable NGR & its control (One dia) at 400KV New Duburi Gird S/S for connectivity with proposed GIS S/S at Ersama an amended BoQ value of Rs.2,63,86,25,342.33, which is 26.06% higher than the original LoA price Rs.209.32 crore.

The Board however advised management to negotiate the rates where there is substantial variation in quantities for different projects of OPTCL in progress and to be executed in future.

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