



**GOVERNMENT OF INDIA  
MINISTRY OF POWER**

**GUIDELINES FOR PREPARATION AND VETTING  
OF REVISED COST ESTIMATES OF HYDRO  
ELECTRIC PROJECTS OF CENTRAL POWER  
SECTOR UNDERTAKINGS AND OTHER HYDRO  
ELECTRIC SCHEMES FUNDED BY GOVERNMENT  
OF INDIA IN INDIA AND ABROAD**

**NEW DELHI**

**October, 2019**  
(Version 2.0)

## **Guidelines for preparation and vetting of Revised Cost Estimates of Hydro Electric Projects of Central Power Sector Undertakings and other Hydro Electric Schemes funded by Government of India in India and abroad**

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**1.0** The Ministry of Finance, Department of Expenditure (PF-II) Division vide their O.M. No. 24(35)/PF-II/2012 dated 5<sup>th</sup> Aug 2016 have laid down guidelines for Appraisal and Approval of Public Funded Schemes and Projects (except matters required to be placed before the Cabinet Committee on Security). These guidelines inter-alia stipulate the following in regard to Revised Cost Estimates:

1.1 Any Increase in costs due to statutory levies, exchange rate variation, price escalation within the approved time cycle and / or increase in costs up to 20 percent due to any other reasons, are covered by the approval of the original cost estimates. Any increase in this regard would be approved by the Secretary of the Administrative Department concerned with the concurrence of the Financial Adviser.

1.2 Any increase in costs beyond 20 percent of the firmed up cost estimates due to time overrun, change in scope, under estimation, etc. (excluding increase in costs due to statutory levies, exchange rate variation and price escalation within the approved time cycle) should first be placed before a Revised Cost Committee chaired by the Financial Adviser (consisting of the Joint Secretary in-charge of the program division and representative of Chief Adviser Cost as members) to identify the specific reasons behind such increase, identify lapses, if any, and suggest remedial measures for the same. The recommendations of the Revised Cost Committee should be placed for fresh appraisal and approval before the competent authority as per the extant delegation of powers (It may be noted that a firmed-up cost estimate here means a cost estimate which has been through the full appraisal and approval procedure as per the extant delegation of powers).

**2.0** In view of the aforesaid instructions of the Ministry of Finance and to streamline the procedure for timely preparation and vetting of Revised Cost Estimates (RCE) of Hydro Electric Projects of Central Power Sector Undertakings (CPSUs), guidelines in two parts i.e. **Part-I**: Guidelines for preparation of revised cost estimates by CPSUs and **Part-II**: Guidelines for vetting of Revised Cost Estimates by CEA/ CWC are prescribed herewith. The guidelines for completion cost are laid down in **Part-III**.

### **3.0 PART– I: GUIDELINES FOR PREPARATION OF REVISED COST ESTIMATES BY CPSUs**

3.1 CPSU shall initiate and prepare the RCE in the manner as described in para 1.1 and 1.2 above. The RCE shall be prepared in the formats attached with Part-II of this Guidelines.

3.2 The activities involved in preparation of RCE are given below:

a) **Project Level activities** – The activities at Project level shall be as under:

- Mapping from Accounting heads to DPR heads .

- Working out executed quantities & head-wise expenditure incurred
- Estimation of anticipated balance quantities / expenditure till completion of the project and Analysis of Cost & Time overrun
- Finalisation & Submission to Regional Office duly vetted by Finance

b) **Regional Office Level activities** – The activities at Regional Office level shall be as under:

- Examination of the proposal and seeking clarifications from the project, if any
- Vetting of Quantity / Price variation
- Vetting of Time Overrun
- Finalisation & Submission to Corporate office duly vetted by Finance

c) **Corporate Office Level activities**-The activities at Corporate Office level shall be as under:

- Examination of proposal and seeking clarifications from the regional office/project, if any
- Finalization of RCE
- Vetting by Finance
- Preparation of Brief Note
- Approval of Management
- Submission to Ministry of Power / CEA

### 3.3 Timelines for preparation of RCE by CPSUs (100 days):

<b>1.0</b>	<b>Project Level</b>	<b>Days</b>
1.1	Initiation of RCE formulation by Project	-
1.2	Mapping from Accounting heads to DPR heads, Working out executed quantities & head-wise expenditure incurred, Estimation of anticipated balance quantities/ expenditure till completion of the project, Analysis of Time overrun with reasons (such as Technical/ contractual problems, Law & order problems, labour problems, natural disaster, geological surprises etc.), Bifurcation of cost variance as per MoF's guidelines / instructions.	30
1.3	Compilation, Review and Finalization of RCE	20
1.4	Vetting by Project Finance	07
1.5	Submission of RCE to Regional Office	02
	<b>Sub Total (1)</b>	<b>59</b>
<b>2.0</b>	<b>Regional Office Level</b>	
2.1	Examination of the proposal	06
2.2	Seeking clarifications from project, if any	03
2.3	Vetting of Quantity / Price Variation	07
2.4	Vetting of Time Overrun	(concurrent)
2.5	Finalization & submission to Corporate Office duly vetted by Finance	02
	<b>Sub Total (2)</b>	<b>18</b>
<b>3.0</b>	<b>Corporate Office Level</b>	
3.1	Examination of the proposal	05
3.2	Seeking clarifications from regional office/project, if any	03
3.3	Finalization of RCE	02
3.4	Vetting of Finance	05
3.5	Preparation of Brief Note	02

3.6	Approval of Management	05
3.7	Submission to Ministry of Power / CEA	01
	<b>Sub Total (3)</b>	<b>23</b>
	<b>Total (1+2+3)</b>	<b>100</b>

**Note:** In case there is no set up at regional level, the time line allotted to Regional level activities be merged with the time line allotted to Corporate level activities.

*The flow chart of activities is given at **Plate-I**.*

3.4 A comparative statement of approved vis-a-vis changed salient features shall be included in RCE proposal. In case, there is no change in salient features w.r.t. approved one, a certificate to this effect shall also be included in RCE proposal.

#### **4.0 PART-II: GUIDELINES FOR VETTING OF REVISED COST ESTIMATES IN CEA/ CWC**

4.1 CEA shall appraise/ vet the Revised Cost Estimate as per the functions assigned under section 73 (h) of the Electricity Act, 2003.

4.2 CPSU shall submit document of Revised Cost Estimates (twelve (12) numbers of hard copies along with equal numbers of soft copies on compact disk) to CEA, containing the following information:

- (i) The details/ information as per Checklist given at **Annex-I**.
- (ii) The details/ information as per formats given at **Annex- IIA** (1 to 3), **Annex-IIB1** (1 to 7) and **Annex- IIB2 & IIB3**.

4.3 CPSU shall also submit a certificate that RCE is on account of;

- (i) change in design/ scope or addition/ deletion or
- (ii) no change in design/ scope or no addition/ deletion

4.4 On receipt of proposal of RCE in CEA, if, during preliminary examination it is found that there is/are major change(s) in the design/ specifications of structure(s)/ equipment with respect to the approved design/ specifications, the proposal shall be treated as “Memorandum of Changes” and the same is required to be got approved by Authority. In such case, the time cycle as indicated in para 4.6 below will commence once the RCE proposal is re-submitted based on the approved “Memorandum of Changes” by Authority.

4.5 Completeness of RCE shall be assessed after its scrutiny by respective appraising groups in CEA/ CWC and shall be decided in Screening Meeting to be held under the Chairmanship of Member (Hydro), CEA within two (2) weeks of receipt of RCE in CEA from CPSU. The RCE complete in all respects will be taken up for detailed examination in accordance with the norms specified in “Guidelines for formulation of Detailed Project Report of Hydro Electric Projects, January 2015 (Revision 5.0)”. The queries raised by appraising group(s), if any, shall be promptly replied by the CPSU within the stipulated time schedule as prescribed by the appraising group(s) failing which the RCE shall stand returned to the CPSU.

4.6 The various aspects / activities in the RCE will be examined by CEA and CWC as per timelines indicated below:

Sl. No.	Aspect/ Activity	Organization	Time Period (days)
1	Receipt of RCE from CPSU & its circulation (12 Copies)		-
<b>(A) In case change in design/ scope or addition/ deletion are involved :</b>			
<b>2</b>	<b>Dam / Barrage Design</b>	<b>CWC</b>	<b>35 *</b>
3	Hydel Civil Design	CWC	25*
<b>4</b>	<b>Gates Design</b>	<b>CWC</b>	<b>25**</b>
5	Construction Machinery	CWC	60 <sup>#</sup>
6	Construction Power	CEA	35*
7	E&M Design	CEA	35*
8	Power Evacuation Works	CEA	35*
9	Civil Quantities Certification	<b>CEA</b>	-
10	E&M Quantities	CEA	25**
	<b>Total (A) [On Critical Path]</b>		<b>60</b>
<b>(B) In case change in design/ scope or addition/ deletion are not involved :</b>			
<b>11</b>	<b>Civil Cost</b>	<b>CWC</b>	<b>30*</b>
<b>12</b>	<b>Construction schedule and phasing of expenditure of balance Civil Works</b>	<b>CEA</b>	<b>08**</b>
13	E&M Cost	CEA	30*
14	Phasing of expenditure of balance E&M works	CEA	08**
<b>15</b>	<b>Combined phasing</b>	<b>CEA</b>	<b>07</b>
<b>16</b>	<b>IDC &amp; FC</b>	<b>CEA</b>	<b>05</b>
<b>17</b>	<b>Preparation of Appraisal Note and its approval</b>	<b>CEA</b>	<b>10</b>
	<b>Total (B) [On Critical Path]</b>		<b>60</b>
	<b>Total (A&amp;B) [On Critical Path]</b>		<b>120</b>

Note: 1. Activities on critical path has been indicated in bold.

2. \* and \*\* are parallel activities.

3. '#' is concurrent activity

- *Appraisal/vetting of RCE by appraising groups in CEA/ CWC including preparation and approval of Appraisal Note shall be completed in 120 days in case change in design/ scope or addition/ deletion are involved and 60 days in case change in design/ scope or addition/ deletion are not involved from the date of acceptance of RCE complete in all respects.*
- *Above time lines do not include the time taken by the CPSU in furnishing clarifications/ replies to the comments/ observations of appraising groups in CEA/CWC.*

The flow chart of activities for vetting of RCE by CEA/ CWC is given at **Plate-II**.

4.7 CEA on appraisal / vetting of RCE, will provide the comments / observations to Ministry of Power.

### **5.0 PART – III: COMPLETION COST**

5.1 It will be mandatory on the part of CPSUs to submit the completion cost of HE Project executed by them to MOP after the project is completed.

5.2 CPSUs shall follow the same procedure for preparation of the proposal for completion cost as given in Part-I and include similar information/ data as given in para 4.2 and 4.3 of Part-II above. The comparison of the completion cost shall be made with respect to the latest approved RCE as well as original sanctioned cost estimates.

5.3 Completion cost is prepared after project is completed and involves mainly the expenditure already incurred by the project authorities. The authenticity/ correctness of expenditure already incurred as considered in the completion cost rests with the project authorities. Project authorities would have to satisfy themselves about the reasonableness of the same, as CEA/ CWC would not be able to examine such fait-accomplis completion cost. As such, a certificate shall be submitted by the concerned CPSU regarding authenticity/ correctness of expenditure incurred.

5.4 The concerned design formations in CWC and CEA need to examine the completion cost proposal from the angle of changes in design with respect to approved designs and provide their observations. Cost appraisal formations may provide the analysis of cost incurred by the concerned CPSU in executing the project with respect to sanctioned cost and awarded cost, latest approved Revised Cost Estimates.

5.5 CEA on appraisal / vetting of RCE, will provide the comments / observations to Ministry of Power.

**6.0** These guidelines are also applicable to Hydro Electric Schemes funded by Government of India in India and abroad.

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**CHECKLIST FOR REVISED COST ESTIMATES/ COMPLETION COST**

1. Prescribed numbers of Hard and Soft copies of the RCE / Completion cost.
2. Copy of TEC/ Concurrence accorded by CEA.
3. Copy of the CCEA approved cost estimate.
4. Approval of extension of time, if any.
5. Contract documents/ Agreement (relevant portion).
6. Bill of Quantities (BOQ) – Original and revised.
7. Drawing volumes- DPR and drawings depicting structural changes, if any made during detail engineering, Bidding and Construction Stage.
8. Construction schedule (Bar chart).
9. A note and comparative statement on salient features as envisaged in approved DPR, during bidding and during construction stage along with justification for deviations from approved DPR.
10. Write up on physical progress.
11. Write up on cost overrun and time overrun.
12. Certificate regarding Quantities executed/ to be executed as considered in RCE as per construction/planning/specification drawings issued and site condition.
13. Copy of Approvals of deviated/ extra items of civil, HM and E&M works along with a note on mechanism of approval and competent authority.
14. Certified copy of actual escalation paid along with detailed calculation of escalation on executed quantities and balance quantities.
15. Copy of latest bill and bill for the month of RCE along with item wise deviation statement showing deviation of quantities executed and amount.
16. Certified copy of expenditure incurred from Finance for all the Sub-Heads.
17. Drawings, Layouts, Estimates/Justifications, Approvals of competent authority and other supporting documents for Infrastructure works i.e. Preliminary, Land, Buildings, Plantation, Miscellaneous, Special T&P, Roads, Environment and Ecology, Tool and Plants for works executed and balance provisions and for changes carried out from DPR as well as new provisions along with justification.
18. Justification for the provision in Establishment based on organization chart of manpower deployed/proposed to be deployed for the project execution/implementation along with detailed breakup, separately for E&M and civil establishment.

**REVISED COST ESTIMATE**  
**(Main Abstract)**

			(Rs. Crores)
Sl. No.	Description	Sanctioned Cost	Revised Cost Estimates
		At Price Level .....	At Price Level.....
<b>1</b>	<b>Civil Works</b>		
	<b>Direct Cost</b>		
<b>I</b>	<b>Works</b>		
	A-Preliminary		
	B-Land		
	C-Works		
	J- Power Plant Civil Works		
	K-Buildings		
	M-Plantation		
	O-Miscellaneous		
	P-Maintenance during Construction		
	Q-Special Tools & Plants		
	R-Communications		
	X-Environment & Ecology		
	Y-Losses on Stock		
	<b>Sub-Total (I-Works)</b>		
<b>II</b>	Establishment		
<b>III</b>	Tools & Plants		
<b>IV</b>	Suspense		
<b>V</b>	Receipts and recoveries		
	<b>Sub-Total (Direct Cost)</b>		
	<b>Indirect Cost</b>		
<b>VI</b>	Capitalisation of abatement of Land Revenues		
<b>VII</b>	Audit & Accounts Charges		
	<b>Sub-Total (Indirect Cost]</b>		
	<b>Total (1) [Cost of Civil Works]</b>		
<b>2</b>	Electro - Mechanical Works		
<b>3</b>	Miscellaneous Works		
	<b>Total (1+2+3)</b>		
<b>4</b>	Interest During Construction & FC		
	<b>Total (1+2+3+4)</b>		

## Variation Statement

(Rs. Lakhs)

Sr. No.	Description	Sanctioned Cost	R.C.E.	Variation (with respect to sanctioned cost)	Variation due to					
					Price Escalation	Change in Scope	Inadequate Provision/over provision	Change in Design	Additional Requirement/new item/addition/Deletion	Other Causes (specify)
		Price Level.....	Price Level.....							
<b>1</b>	<b>Civil Works</b>									
	<b>Direct Cost</b>									
<b>I</b>	<b>Works</b>									
	A-Preliminary									
	B-Land									
	C-Works									
	J- Power Plant Civil Works									
	K-Buildings									
	M-Plantation									
	O-Miscellaneous									
	P-Maintenance during construction									
	Q-Special Tools & Plants									
	R-Communications									
	X-Environment & Ecology									
	Y-Losses on Stock									
	<b>Sub-Total (I-Works)</b>									
<b>II</b>	Establishment									
<b>III</b>	Tools & Plants									
<b>IV</b>	Suspense									

V	Receipts and recoveries									
	<b>Sub-Total (Direct Cost)</b>									
	Indirect Cost									
i	Capitalisation of abatement of Land Revenues									
ii	Audit & Accounts Charges									
	<b>Sub-Total (Indirect Cost)</b>									
	<b>Total (1) (Cost of Civil Works)</b>									
<b>2</b>	Electro - Mechanical Works									
<b>3</b>	Miscellaneous Works									
	<b>Total (1+2+3)</b>									
<b>4</b>	Interest During Construction & FC									
	<b>Total (1+2+3+4)</b>									

**REVISED COST ESTIMATE (CIVIL WORKS)**

**(Rs. Lakhs)**

Sl. No.	Description of items	Unit	Sanctioned Cost			As per BOQ			As per Revised Estimate						Variation (with respect to sanctioned cost)		Variation due to								
			Qty	Rate	Amt	Qty	Rate	Amt	Completed work up to -----			Balance wok			Total	Qty	Amt	Price Escalation	Change in Scope	Inadequate Provision/over provision	Change in Design	Additional requirement /New Item /Addition /Deletion	Other causes (specify)	Remarks	
									Qty	Rate	Amt	Qty	Rate	Amt	Qty										Amt
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

*Name of Project*  
**Cost Estimates of Electro Mechanical Works**  
 (Abstract of cost)

(Rs. Lakhs)

Sl. No.	Item	Sanctioned Cost Estimates at ----- PL	Awarded Cost	Revised Cost Estimates at ----- PL				Variation w.r.t. Sanctioned cost	Reasons of Variation
				Expenditure up to -----	Balance as on -----	Escalated Balance	Total		
1	2	3	4	5	6	7	8	9	10
1	<b>Preliminary - (Annex-IIB1.1)</b>								
2	<b>Generating Plant and Equipment :</b>								
	a)Generator, turbine and accessories-( <b>Annex-IIB1.2</b> )								
	b) Auxiliary electrical equipment for power station - ( <b>Annex-IIB1.3</b> )								
	c) Auxiliary mechanical equipment and services for power station - ( <b>Annex-IIB1.4</b> )								
	<b>d) GST on 2 (a), (b) and (c) as applicable</b>								
	e) Transportation, handling and Insurance charges								
	<b>f) GST on 2 (e) as applicable</b>								
	g) Erection and commissioning charges								
	<b>h) GST on 2 (g) as applicable</b>								
	<b>Total (Generating Plant and Equipment)</b>								
3	<b>Sub-station equipment &amp; Auxiliary equipment and service for Switchyard :</b>								
	a) Substation equipment and auxiliary equipment and service for Switchyard - ( <b>Annex-IIB1.5</b> )								

	<b>b) GST on 3 (a) as applicable</b>								
	c) Transportation, handling and Insurance charges								
	<b>d) GST on 3 (c) as applicable</b>								
	e) Erection and commissioning charges								
	<b>f) GST on 3 (e) as applicable</b>								
	<b>Total (Switchyard)</b>								
<b>4</b>	<b>GIS &amp; XLPE Cables - Off-shore Equipments :</b>								
	a) Gas Insulated Switchyard & XLPE Cables- (AnnexIIB1.6)								
	b) Custom Duty / <b>GST on 4 (a) as applicable</b>								
	c) Transportation, handling and Insurance charges								
	<b>d) GST on 4 (c) as applicable</b>								
	e) Erection and commissioning charges								
	<b>f) GST on 4 (e) as applicable</b>								
	<b>Total (GIS &amp; XLPE Cables - Off-shore Equipments)</b>								
<b>5</b>	<b>Total (2 to 4)</b>								
<b>6</b>	Contingencies								
<b>7</b>	Tools & Plants								
<b>8</b>	<b>Sub-Total (1+5+6+7)</b>								
<b>9</b>	Establishment Cost								
<b>10</b>	<b>Sub-Total (8+9)</b>								
<b>11</b>	Audit & Accounts								
	<b>TOTAL (10 +11)</b>								
	<b>Total (Rs. Crores)</b>								

*Name of Project*  
**Cost Estimates of Electro Mechanical Works  
(Preliminary)**

(Rs. Lakhs)

Sl. No.	Item Particulars	Unit	Sanctioned Cost Estimates at ----- PL			Awarded Cost	Revised Cost Estimates at ----- PL				Variation w.r.t. Sanctioned cost	Reasons of Variation	
			Qty	Rate	Amount		Expenditure up to -----	Balance as on -----	Escalated Balance	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	
1	Consultancy												
2	Model Test												
3	Construction Power	Included in O-Miscellaneous under Civil Works											
	a) D.G. Sets												
	b) Substation												
	c) Transmission Line												
	d) Distribution Line												
	e) LT Switchgear, cable												
	f) Other Miscellaneous equipment												
	Sub-total (3)												
	<b>Total (1+2+3)</b>												

*Name of Project*  
**Cost Estimates of Electro Mechanical Works**  
**(Generator, Turbine and Accessories)**

(Rs. Lakhs)

Sl. No.	Item Particulars	Unit	Sanctioned Cost Estimates at ----- PL			Awarded Cost	Revised Cost Estimates at ----- PL				Variation w.r.t. Sanctioned cost	Reasons of Variation
			Qty	Rate	Amount		Expenditure up to -----	Balance as on -----	Escalated Balance	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13
1	a) Generating units ----- MW (excluding 10% continuous loading), ----- rpm., ----- m head, --- p.f. -- - kV ----- turbine complete with Unit auxiliaries allied equipment such as MIV, Governors, AVR, Excitation System.											
	b) Unit Control Boards											
	c) Cooling water system comprising pump sets, valves, piping etc.											
	d) High/ Low pressure Compressed Air system for Station Services including pipes and valves.											
	e) Drainage and dewatering system											
	f) Spares (Including one spare runner)											
	<b>Sub Total [1(a) to 1(f)]</b>											

2	---- kV Isolated phase Bus Duct, -----A, Rating comprising main and delta bus ducts for connection between generator terminals and --- phase step-up transformers including generator terminal equipment comprising CTs, LAVT, UAT, ET, Neutral Grounding Cubicles complete with grounding transformer resistor etc.											
3	Supervisory control and data acquisition system, relay, measuring and protection device.											
4	Control & protection panels for generators											
5	Butterfly valve (Dia - ---- m)											
6	Lubricating oil & Governor oil first filling											
7	Spares											
	<b>Sub Total (2 to 7)</b>											
	<b>Total</b>											

*Name of Project*  
**Cost Estimates of Electro Mechanical Works**  
**(AUXILIARY ELECTRICAL EQUIPMENT FOR POWER STATION)**

(Rs. Lakhs)

Sl. No.	Item Particulars	Unit	Sanctioned Cost Estimates at ----- PL			Awarded Cost	Revised Cost Estimates at ----- PL				Variation w.r.t. Sanctioned cost	Reasons of Variation
			Qty	Rate	Amount		Expenditure up to -----	Balance as on -----	Escalated Balance	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Step up Transformer (Rating ---/--- kV, --- MVA, -- phase, ----- type)											
2	Unit Auxilialry Transformer (Rating ---/--- kV, --- MVA, -- phase, ----- type)											
3	Station Supply Transformer (Rating ---/--- kV, --- MVA, -- phase, ----- type)											
4	Station Auxiliary Transformer (Rating ---/--- kV, --- MVA, --- phase, ---- - type)											
5	Station Service Transformer (Rating ---/--- kV, --- MVA, --- phase, ---- - type)											

<b>6</b>	Station Service Transformer (Rating ---/--- kV, --- MVA, --- phase, ---- - type)											
<b>7</b>	HT/LT AC switchgear											
<b>8</b>	D.C. Batteries for station services & for communication, Battery charging equipment, D.C. Distribution Board with D.C. Switchgear											
8.1	For power house (--V,-- AH)											
8.2	For Switchyard (--- V, -- AH)											
8.3	For Dam site (--- V, --- AH)											
8.4	For Butterfly valve house (--- V, ----- AH)											
<b>9</b>	Diesel Generating Set											
9.1	---- V, ----- kVA											
9.2	---- V, ----- kVA											
9.3	---- V, ----- kVA											
<b>10</b>	Public address system & Security & Surveillance system											
<b>11</b>	Control & Power Cables, HT & LT(AC, DC, Instrumentation & OFC)											
<b>12</b>	Cable racks and accessories											
<b>13</b>	Ground mat & earthing for P.H. & Switchyard											

<b>14</b>	Illumination of Power House & Switchyard											
<b>15</b>	Electrical Test Laboratory & Generator testing instruments											
<b>16</b>	Spares											
	<b>Total</b>											

*Name of Project*  
**Cost Estimates of Electro Mechanical Works**  
**(AUXILIARY MECHANICAL EQUIPMENT AND SERVICES FOR POWER STATION)**

(Rs. Lakhs)

Sl. No.	Item Particulars	Unit	Sanctioned Cost Estimates at ----- PL			Awarded Cost	Revised Cost Estimates at ----- PL				Variation w.r.t. Sanctioned cost	Reasons of Variation
			Qty	Rate	Amount		Expenditure up to -----	Balance as on -----	Escalated Balance	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Electrical Overhead Travelling Cranes											
1.1	Electrical overhead Travelling crane for P.H. (Capacity ---/---T)											
1.2	Electrical Overhead Travelling crane for Butterfly Valve handling (Capacity ----/--- T)											
1.3	Monorail crane (Capacity - -- T) for Drainage/ Dewatering pumps											
2	Electric Lifts & Elevators (Height difference - ---- meters, Passenger capacity											

3	Fire fighting system with storage tanks, pipes, pumps, valves, etc. for generating units, transformers and other areas.											
4	Air conditioning, ventilation & heating system for P.H., Transformers / GIS and other areas.											
5	Filtered water supply for power house											
6	Oil handling system for lubricating oil, governor oil and transformer oil with pipes, valves, tanks & purifiers.											
7	Workshop machines and equipment											
8	Spares											
	<b>Total</b>											

*Name of Project*  
**Cost Estimates of Electro Mechanical Works**  
**(SUBSTATION EQUIPMENTS & AUX. EQUIPMENT and SERVICE FOR SWITCHYARD/ POTHEAD YARD)**

(Rs. Lakhs)

Sl. No.	Item Particulars	Unit	Sanctioned Cost Estimates at ----- PL			Awarded Cost	Revised Cost Estimates at ----- PL				Variation w.r.t. Sanctioned cost	Reasons of Variation
			Qty	Rate	Amount		Expenditure up to -----	Balance as on -----	Escalated Balance	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13
1	----- kV Switchyard/ Pothead Yard equipment											
a)	Circuit Breaker											
b)	Isolators with 2E/S											
c)	Isolators with 1E/S											
d)	Lighting Arresters at switchyard											
e)	Lighting Arresters at Transformer Deck											
f)	Wave traps											
g)	Current Transformers											
h)	CVT											
i)	Bus CVT											
j)	Bus post Insulators											
k)	Conductors, IPS tubing and hardware and other sundry equipment											

1)	Telecommunication Equipment PLCC Equipment, and internal communication												
m)	Overhead Conductor, Insulator, hardware fittings, tower including foundation for connection b/w Generator Transformer & Switchyard.												
n)	--- MVAR, 420 kV, Bus Reactor												
2	Towers ,Gantry, support structure for equipment, foundation for structures & misc. civil works for other equipment												
3	Fencing and security												
4	Spares												
	<b>Total</b>												

*Name of Project*  
**Cost Estimates of Electro Mechanical Works**  
**(SUBSTATION EQUIPMENTS & AUX. EQUIPMENT & SERVICE FOR SWITCHYARD)**  
**(OFF-SHORE EQUIPMENT)**

(Rs. Lakhs)

Sl. No.	Item Particulars	Unit	Sanctioned Cost Estimates at ----- PL			Awarded Cost	Revised Cost Estimates at ----- PL				Variation w.r.t. Sanctioned cost	Reasons of Variation
			Qty	Rate	Amount		Expenditure up to -----	Balance as on -----	Escalated Balance	Total		
								-				
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>1</b>	<b>GIS</b>											
	a) GIS Bays											
	b) Spares											
	<b>Sub-total (1)</b>											
<b>2</b>	<b>XLPE Cable</b>											
	a) XLPE Cable											
	b) GIS end terminations											
	c) Pothead yard end terminations											
	d) Spares											
	<b>Sub-total (2)</b>											
	<b>Total (1+2)</b>											

*Name of Project*  
Variation Statement of E&M Works (Abstract)

(Rs. Lakhs)

Sl. No.	Items	Sanctioned Cost at ---- PL	RCE at ----- PL	Variation	Variation due to						
					Price Escalation	Change in Scope	Inadequate Provision/ over provision	Change in Design	Additional Requirement/new item/addition/Deletion	Other Causes	Total
<b>1.1</b>	<b>Electro-Mechanical</b>										
1.1.1	EOT Crane										
1.1.2	T.G. Sets										
1.1.3	Bus Duct										
1.1.4	Penstock Valves										
1.1.5	Power Transformer										
1.1.6	Protection and Relay Panels										
1.1.7	AC Supply System										
1.1.8	Switchyard										
1.1.9	Power and Control Cables										
1.1.10	SCADA & XLPE (FC)										
1.1.11	Electrical Auxiliaries										
1.1.12	Mechanical Auxiliaries										
1.1.13	Initial Spares (IC)										

1.1.14	Initial Spares (FC)										
	<b>Total (Equipment)</b>										
<b>1.2</b>	<b>Services</b>										
1.2.1	Preliminary										
1.2.2	Freight and Insurance										
1.2.3	Erection and Commissioning										
	<b>Total (Services)</b>										
<b>1.3</b>	<b>GST</b>										
	<b>Total (GST)</b>										
<b>1.4</b>	<b>Overheads</b>										
1.4.1	Establishment										
1.4.2	Audit and Accounts										
1.4.3	Contingency										
1.4.4	Tools and Plants										
	<b>Total (Overheads)</b>										
	<b>Total (Indian Component)</b>										
	<b>Total (Foreign Component)</b>										
	<b>Total (E&amp;M Works)</b>										
	<b>Total (Rs. Crores)</b>										

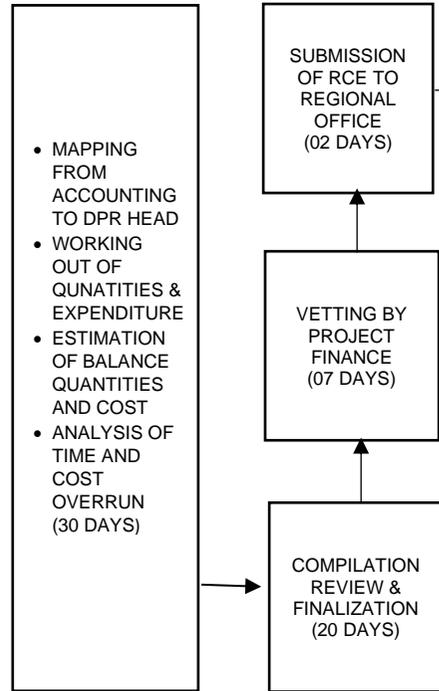
*Name of Project*  
**Variation Statement of E&M Works (Item-wise)**

(Rs. Lakhs)

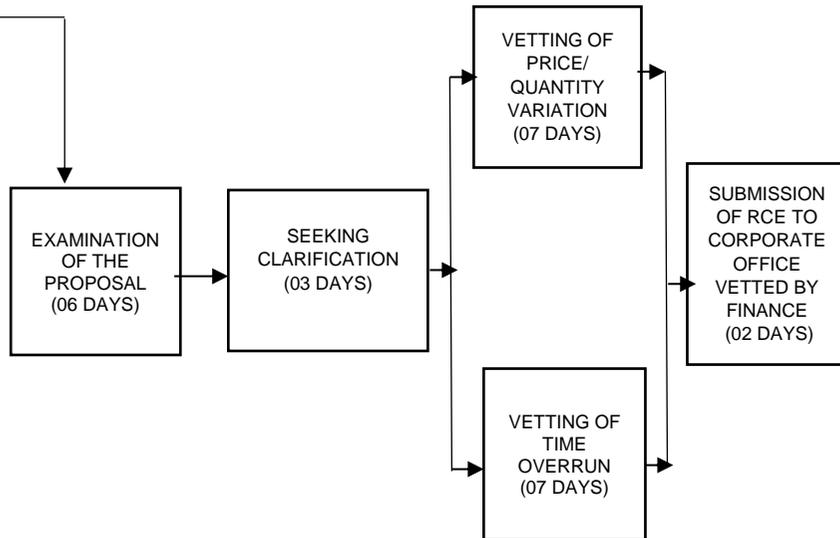
Sl. No.	Description of Items (As per Annex-IIB1)	Sanctioned Cost at ----- PL	RCE at ----- PL	Variation	Variation due to						
					Price Escalation	Change in Scope	Inadequate Provision/ over provision	Change in Design	Additional Requirement/new item/addition/Deletion	Other Causes	Total
	-----										
	-----										
	-----										
	-----										
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	-----										

**FLOW CHART FOR PREPARATION OF REVISED COST ESTIMATE (RCE)**

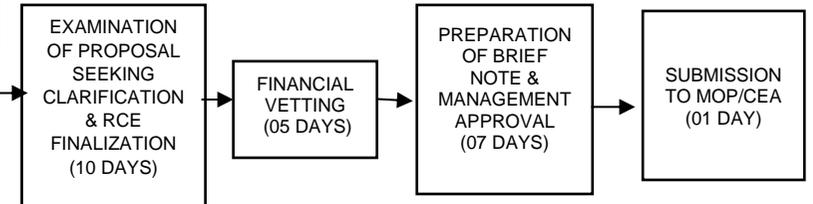
**PROJECT LEVEL ACTIVITIES**



**REGIONAL OFFICE LEVEL ACTIVITIES**



**CORPORATE OFFICE LEVEL ACTIVITIES**



59 DAYS

18 DAYS

23 DAYS

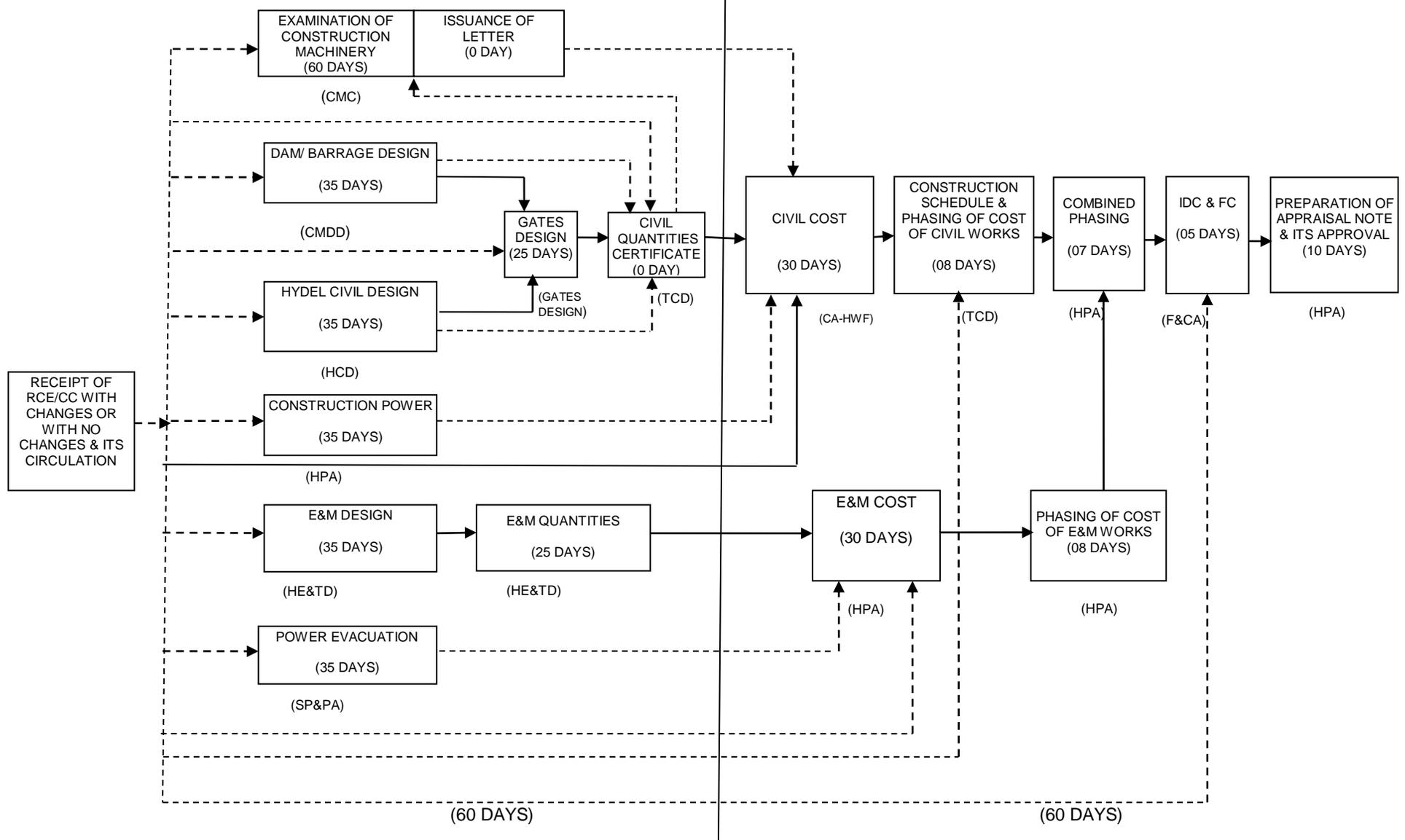
**TOTAL – 100 DAYS**

# FLOW CHART OF PROCEDURE FOR VETTING OF RCE

PLATE-II

## FOR EXAMINATION OF DESIGN/ SCOPE CHANGE OR ADDITION/ DELETION (60 DAYS)

## FOR EXAMINATION & VETTING OF RCE (60 DAYS)



Total - 120 Days