

Before
UTTARAKHAND ELECTRICITY REGULATORY COMMISSION
Petition No. 73 of 2025

In the Matter of:

Investment Approval for DPR of “Augmentation of Transformation Capacity from 2x160 MVA (220/132 kV) to 3x160 MVA (220/132 kV) by Supply, Erection, Testing & Commissioning of 01 No. 160 MVA 220/132 kV Transformer at 220 kV Substation, Virbhadra under 220 kV (O&M) Division, Rishikesh.”

And

In the Matter of:

Power Transmission Corporation of Uttarakhand Limited (PTCUL)
Vidyut Bhawan, Near ISBT Crossing,
Saharanpur Road, Majra,
Dehradun

.....Petitioner

Coram

Shri M.L. Prasad	Chairman
Shri Anurag Sharma	Member (Law)
Shri Prabhat Kishor Dimri	Member (Technical)

Date of Order: December 02, 2025

ORDER

This Order relates to the Petition filed by Power Transmission Corporation of Uttarakhand Ltd. (hereinafter referred to as “PTCUL” or “the Petitioner”) vide letter No. 1788/Dir. (Operations)/PTCUL/ dated 26.10.2024 for “Augmentation of Transformation Capacity from 2x160 MVA (220/132 kV) to 3x160 MVA (220/132 kV) by Supply, Erection, Testing & Commissioning of 01 No. 160 MVA 220/132 kV Transformer at 220 kV Substation, Virbhadra under 220 kV (O&M) Division, Rishikesh” under Para 11 of Transmission Licence. [Licence No. 1 of 2003].

1. Background

- 1.1. In the aforesaid Petition, the Petitioner has submitted the following proposal for investment approval:

Particulars	Total Project Cost as per DPR (including IDC) (in Crore)
Augmentation of Transformation Capacity from 2x160 MVA (220/132 kV) to 3x160 MVA (220/132 kV) by Supply, Erection, Testing & Commissioning of 01 No. 160 MVA 220/132 kV Transformer at 220 kV Substation, Virbhadra under 220 kV (O&M) Division, Rishikesh	27.14

- 1.2. The Petitioner has submitted a copy of the extract of Minutes of 94th meeting of the Board of Directors (BoD) of PTCUL held on 26.09.2024, whereby the Petitioner's Board has approved the Corporation's proposals same is stated below:

"After consideration, the Board passed following resolution unanimously.

RESOLVED THAT the consent of the Board be and is hereby accorded to approve the Detailed Project Repot for Augmentation of Transformation Capacity from 2x160 MVA (220/132 kV) to 3x160 MVA (220/132 kV) by Supply, Erection, Testing & Commissioning of 01 No. 160 MVA 220/132 kV Transformer at 220 kV Substation, Virbhadra under 220 kV (O&M) Division, Rishikesh at a total project cost Rs. 27.14 Cr. with IDC and Rs. 26.17 Cr. without IDC.

RESOLVED FURTHER THAT the DPR submitted and approved in the 92nd BoD meeting held on 27/08/2024 vide agenda item no. 92.16 on the same project shall be treated as null & void and shall be deemed to have been withdrawn by the management.

RESOLVED FURTHER THAT the aforesaid revised DPR is submitted to Hon'ble UERC for investment approval.

RESOLVED FURTHER THAT Managing Director, Director (Operations) or any other functional Director jointly and severally are hereby authorized to sign, seal and certifies all the documents, petitions and all other legal paper that might be required for sending the proposal for investment approval for signing all clarifications and to do all other such legal acts may be necessary to be acted upon in furtherance of the investment approval.

RESOLVED FURTHER THAT the Managing Director and/or Director Finance and/or Company Secretary be and are hereby jointly and severally authorized to approach to REC/PFC/NABARD/HUDCO/Nationalized Banks and other financial institution as they deem fit and proper and tie-up the loan component with a debt equity ratio of 70:30.”

- 1.3. To justify the need for the proposed work, the Petitioner through its Petition has submitted as follows:

“220/132/33 kV Substation, Virbhadra, Rishikesh is one of the important substation of PTCUL, which was commissioned in year 1974-75. Presently there are 2 nos. 160 MVA (220/132 kV) transformers and 2 nos. 40 MVA (132/33 kV) transformers which caters the load requirement of domestic, commercial, industrial as well as agricultural consumers of Dehradun, Haridwar, Rishikesh town, hilly areas of Pauri Garhwal. The details of 220 kV and 132 kV feeders which are connected from the substation is as follows:

- (a) 220 kV Rishikesh-Dharasu-I*
- (b) 220 kV Rishikesh-Dharasu-II*
- (c) 220 kV Rishikesh-Chamba*
- (d) 220 kV Rishikesh-SIDCUL*
- (e) 220 kV Rishikesh-IIP Harrawala*
- (f) 132 kV Rishikesh-Lal Tapper*
- (g) 132 kV Rishikesh-Bindal*
- (h) 132 kV Rishikesh-Jwalapur*
- (i) 132 KV Rishikesh-Chilla-Bhupatwala*
- (j) 132 kV Rishikesh-Srinagar*

It is to apprise here that previously 03 no. 160 MVA 220/132 kV Power Transformers were installed at 220 kV Substation, Virbhadra Rishikesh out of which 01 no. 160 MVA 220/132 kV Power Transformer had been shifted to 220 kV Substation, Jhajhra, Dehradun on dated 20.07.2019 on emergency basis to maintain the supply of state capital region Dehradun. It is also to mention here that the existing 160 MVA Transformers are approximately 97.61% loaded and during the closure of Chilla Power house in this summer season loading on both the transformers observed almost as 100% of their full load capacity. The chart showing the maximum load on transformers and average load growth in the last year at 220 kV Substation Virbhadra is being enclosed with DPR for reference. Keeping in view the growth in load demand in recent times and expected load growth in coming year

as well as to meet out T-1 condition, it is necessary to increase the transformation capacity of substation including other related associated works. Therefore, a proposal is being submitted consisting the following works which are required to be carried out for system strengthening of 220 kV Substation, Virbhadra, Rishikesh."

- 1.4. The Petitioner has stated that the estimated cost proposed in the DPR has been prepared on the basis of the PTCUL's SoR 2024-25.
- 1.5. The Petitioner has enclosed the Bar chart for the project with an execution period of 15 months from the date of award of the contract. Further, the Petitioner under the financial analysis has projected an IRR of 16.16% with breakeven in the 10th year of operations.
- 1.6. On examination of the Petition and the documents submitted by the Petitioner, certain deficiencies/shortcomings were observed in the Petition, which were communicated to the Petitioner vide the Commission's letter dated 28.10.2025. In response to the queries, the Petitioner, through its letter dated 03.11.2025 submitted the reply to the Commission. The queries raised and corresponding replies submitted the Petitioner are reproduced herein below:

Query 1	<p>PTCUL has not provided sufficient data, documents and evidence in its petition to justify its claims. In this regard, PTCUL is required to submit the:</p> <p>a. Detailed study report of proposed scheme justifying the future load requirement and conditions of T-1 contingency.</p> <p>b. Submit the details of expected future load in the following format:</p> <table><tr><th>S. N.</th><th>Name of Substation/ Area/ Consumer</th><th>Type of Load (Industrial/ Domestic)</th><th>Expected Capacity (in MW)</th><th>Expected Year of Commissioning</th><th>Remarks (Reason for Consideration)</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <p>c. Submit the details of maximum loading (in Amperes) from September, 2024 to September, 2025 for 2X160 MVA (220/132 kV) transformers.</p> <p>d. Submit the technical specifications of existing 2 no. of 160 MVA transformers (with name plate photo) and proposed 01 no. of 160 MVA transformer with supporting documents.</p>	S. N.	Name of Substation/ Area/ Consumer	Type of Load (Industrial/ Domestic)	Expected Capacity (in MW)	Expected Year of Commissioning	Remarks (Reason for Consideration)						
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Reply 1	<p>(a)</p> <p>1. Detailed system report of proposed project of Augmentation of Transformation Capacity from 2 x 160 MVA (220/132 kV) to 3 x 160 MVA (220/132 kV) by Supply, Erection, Testing & Commissioning of 01</p>												

No. 160 MVA, 220/132 kV Transformer at 220 kV Substation, Virbhadra under 220 kV (O&M) Division, Rishikesh is attached.

2. 160 MVA Transformers are 97.61% (410 Amp. against full load of 420 Amp) loaded and during the closure of Chilla Power house in previous summer season loading on both the transformers observed almost as 100% of their full load capacity.
3. During the outage (Tripping/Shutdown) of 01 no. of 160 MVA transformer at the substation, the other available 160 MVA transformer is not sufficient to cater the load independently. Keeping in view of growth in load demand and to meet out T-1 contingency (as per CEA guidelines), it is essential to augment the transformation capacity of the substation from 2x160 MVA to 3x160 MVA by installing 01 No. additional 160 MVA (220/132 kV) Transformer at 220 kV Substation, Virbhadra, Rishikesh.

(b)

S. N.	Name of Substation/ Area/ Consumer	Type of Load (Industrial/ Domestic)	Expected Capacity (in MW)	Expected Year of Commissioning	Remarks (Reason for Consideration)
1	220 kV S/s Virbhadra, Rishikesh	Industrial & Domestic	(Attached)	2026	<ol style="list-style-type: none"> 1. T-1 contingency condition will be meetout thus improving the overall transmission system availability of the substation. 2. Meeting the expected future load growth demand Garhwal region. in Garhwal region. 3. Enhanced power handling capability that would provide adequate and reliable power supply for socio-economic growth of the Garhwal region. 4. Improved voltage profile, leading to better consumer satisfaction. 5. To cater the load demand emerges out of floating population of Chardham pilgrims, tourists and upcoming Kumbh-2027.

	<p>(c) Details of maximum loading (in Amperes) from September, 2024 to September, 2025 for 2x160 MVA (220/132 kV) Transformers is attached.</p> <p>(d) The technical specification of existing 2 no. of 160 MVA transformers (with name plate photo) and proposed 01 no. of 160 MVA transformer with supporting documents is attached</p>
Query 2	In the Petition, it has been proposed that the source of financing will be 70% through a loan and 30% through equity. In this regard, PTCUL is required to submit supporting documents/approval letters from Financial Institution and GoU confirming their commitment to the proposed financing arrangement.
Reply 2	<p>The 70% of loan against above subject project was sanctioned by REC under Scheme no. UA-TD-TRM-118-2025-19391 and PFC under loan no. 09303096 (copy of REC & PFC sanction letter with terms & conditions enclosed).</p> <p>Further, it is to inform that the 30% of entire Equity contribution from the Government of Uttarakhand (GoU) shall not be required at one time. It shall be required in phases as per the progress of the project, during the entire completion schedule of the project.</p> <p>The year-wise equity requirement against the above project will be demanded from Government of Uttarakhand (GoU) through State Budget by submitting Annual Plan, as it has been done for all earlier projects. May like to apprise here that the above project is already approved in the Master Plan of projects approved by GoU vide GO No. 553/(2)2024/05-04/2024 dated 02.09.2024 (Copy enclosed)</p>
Query 3	In the Petition, PTCUL has submitted that in the year 2019, one of the 160 MVA transformers from the 220 kV Rishikesh Substation was transferred to Jhajhra, Dehradun. In this regard, PTCUL is required to justify the accounting treatment adopted for the transferred transformer as well as for the newly proposed transformer, since the transferred transformer continues to be reflected as part of the assets of the 220 kV Rishikesh Substation.
Reply 3	The transferred 160 MVA Transformer was shifted to 220 kV Substation, Jhajhra on invoice and all statutory accounting procedures were followed and it is further informed that shifted 160 MVA Transformer is now part of assets of 220kV Substation, Jhajhra, Dehradun.
Query 4	PTCUL is also required to submit a Block Diagram of all transmission substations (with voltage level and capacity) and Generations along with associated transmission lines, including line lengths and conductor types connecting 220/132 kV Rishikesh S/s.

Reply 4	<i>Block Diagram of all transmission substation (with voltage level and capacity) and Generations along with associated transmission lines, including line lengths and conductor types connecting 220/132 kV Rishikesh S/s is attached.</i>
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2. Commission's Observations, Views and Directions:

2.1. Based on the submissions made in the Petition and subsequent submissions of the Petitioner, the Commission observed the following:

2.1.1 The 220/132 kV Virbhadra, Rishikesh substation presently operates with an installed transformation capacity of 320 MVA (2×160 MVA). Earlier, three 160 MVA (220/132 kV) transformers were installed at the 220 kV Rishikesh substation. However, one 160 MVA transformer was shifted to the 220 kV Jhajra substation, Dehradun on 20.07.2019, after which, the 220 kV Rishikesh substation has been operating with only two nos. 160 MVA transformers.

2.1.2 Presently, it has been stated that 2×160 MVA T/f feed power to 10 nos. of 220 kV and 132 kV feeders with maximum loading of 312 MVA against the total installed capacity of 320 MVA, implying 97.61% loading on each transformer. The following loading details for the transformers were given by the Petitioner:

S.No	Month	160 MVA 220/132 kV Transformer-I (BHEL)				160 MVA 220/132 kV Transformer-II (CGL)			
		Max. Load HV Side (in amp)	Full Load Current (FLC) HV Side (in Amp)	Max Load (in MVA)	% Loading	Max. Load HV Side (in amp)	Full Load Current (FLC) HV Side (in Amp)	Max Load (in Amp)	% Loading
1	Apr-24	289	420	110.12	68.81	276	420	105.17	65.71
2	May-24	410	420	156.23	97.62	410	420	156.23	97.62
3	Jun-24	404	420	153.94	96.19	402	420	153.18	95.71
4	July-24	404	420	153.94	96.19	402	420	153.18	95.71
5	Aug-24	405	420	154.32	96.43	402	420	153.18	95.71

From the loading details the submissions made by the Petitioner gets substantiated as it can be observed that for majority of time the T/f are heavily loaded, further, during discussions held in meeting, the Petitioner had informed that in view of the upcoming Kumbh Mela in Haridwar, PTCUL has proposed augmentation of 240 MVA of overall transformer capacity at the 132/33 kV S/s Bhupatwala (3×40 MVA to $1 \times 40 + 2 \times 80$ MVA) and 132/33 kV S/s Jwalapur (3×40 MVA to 3×40 MVA + 1×80

MVA), both of which draw power directly from the 220/132 kV S/s Virbhadra, Rishikesh.

2.1.3 The Petitioner has also submitted that during the outage (tripping/shutdown) of one 160 MVA transformer at the substation, the remaining 160 MVA transformer is not adequate to cater to the load independently and T-1 contingency cannot be met. With regards to the T-1 contingency, it is observed that during the shutdown of the Chilla Powerhouse in the previous summer season, the loading on both the transformers reached almost 100%, indicating operation at or near full rated capacity. Therefore, the Petitioner has submitted that considering the anticipated growth in load demand and in order to meet the requirement of the T-1 contingency criteria as per CEA guidelines, it is essential to augment the transformation capacity of the substation from 2×160 MVA to 3×160 MVA by installing one additional 160 MVA (220/132 kV) transformer at the 220 kV Substation, Virbhadra, Rishikesh.

2.1.4 That from the submissions made by the Petitioner and the information given for the said work, the reasons and the benefits stated by Petitioner can be summarised as follows:

1. T-1 contingency condition will be met to improve the overall transmission system availability of the substation.
2. Meeting the expected future load growth demand in Garhwal region.
3. Enhanced power handling capability that would provide adequate and reliable power supply for socio-economic growth of the Garhwal region.
4. Improved voltage profile, leading to better consumer satisfaction.
5. To cater the load demand emerges out of floating population of Chardham pilgrims, tourists and upcoming Kumbh-2027.

2.1.5 From the justification stated in the Petition and subsequent submissions as summarised above, the Commission observed that with the execution of the proposed work following benefits will be realised:

1. The high loading levels of transformers at Virbhadra, which have been consistently approaching their rated capacity, will be relieved;

2. Adequate N-1/T-1 contingency compliance will be ensured, as the present system deviates from the prescribed planning norms;
3. The system will be capable of catering to the anticipated regional load growth, including significant seasonal demand variations;
4. Operational constraints arising during hydropower shutdown periods (e.g., at Chilla Power House) will be effectively managed.

Based on the above submissions of the Petitioner, the Commission finds merit in the proposal to increase the transformation capacity of the Virbhadra substation from 2 X 160 MVA T/f to 3 X 160 MVA T/f. The need is justified both from a system adequacy and reliability perspective. The Commission also notes that the augmentation aligns with long-term planning requirements for the Garhwal region and upcoming load obligations, including pilgrimage-related demand.

2.1.6 The Petitioner has submitted that the financing of the project will be done from the REC & PFC and in this regard, it has submitted the letter from REC and PFC, wherein, REC vide its letter dated 28.07.2025 & PFC vide its letter dated 03.09.2025, has agreed to grant loan assistance of Rs. 19.00 Crore, which constitutes 70% of the total DPR cost for the proposed project. However, regarding the equity portion, PTCUL has not provided any supporting documents from Government of Uttarakhand, but has stated that the entire equity of Rs. 8.14 Crore which will be funded by Government of Uttarakhand which shall be required in phases as per the progress of project during the entire completion schedule of the project, therefore, the year wise equity requirement against the above project will be demanded from Government of Uttarakhand (GoU) through State budget by submitting annual plan to the GoU, as it has been done for all earlier projects.

2.1.7 The Petitioner has considered the Price Contingencies @ 6.8%, Contingency @ 3% and Project Overheads @ 5% in the DPR. The Commission has not considered Price Contingencies @ 6.8% and instead in order to maintain uniformity with recent investment approvals, calculated the total project cost considering only Contingency @ 3% and Project Overheads @ 5%, based on past Commission practice.

Further, as the issue of SoR revisions is currently under deliberation before the Commission, the revised rates in SoR of FY 2024-25 cannot be considered final. Accordingly, estimates based on these rates are also provisional in nature. After finalizing the SoR, the Commission will carry out a prudence check of the costs incurred and financing thereof, in accordance with Licence conditions and MYT Regulations during ARR scrutiny.

- 2.2. Therefore, in view of the deliberation made above, the Commission considers the need for the proposed work as justified and accordingly, grants in-principle approval for Rs. 25.06 Crore (including IDC) as shown in the table given below and directs the Petitioner to go ahead with the aforesaid work subject to fulfilment of the conditions mentioned below:

Capital Cost Approved by the Commission

Name of the work	Project Cost including IDC as per DPR (Rs. Crore)	Project Cost Considered by the Commission (including IDC) (Rs. Crore)
Augmentation of Transformation Capacity from 2x160 MVA (220/132 kV) to 3x160 MVA (220/132 kV) by Supply, Erection, Testing & Commissioning of 01 No. 160 MVA 220/132 kV Transformer at 220 kV Substation, Virbhadra under 220 kV (O&M) Division, Rishikesh	27.14	25.06

- (i) The Petitioner should go for the competitive bidding for obtaining most economical prices from the bidders.
- (ii) All the loan conditions as may be laid down by the funding agency in their detailed sanction letter are strictly complied with.
- (iii) The Petitioner shall, within one month of the Order, submit a letter from the State Government or any such documentary evidence in support of its claim for funding agreed by the State Government or any other source in respect of the proposed projects.
- (iv) After completion of the aforesaid projects, the Petitioner shall submit the completed cost and financing of the projects.

- (v) As the issue of SoR revisions is currently under deliberation before the Commission, the revised rates in SoR of FY 2024-25 cannot be considered final. Accordingly, estimates based on these rates are also provisional in nature. After finalizing the SoR, the Commission will carry out a prudence check of the costs incurred and financing thereof, in accordance with Licence conditions and MYT Regulations during ARR scrutiny.
- (vi) The cost of servicing the project cost shall be allowed in the Annual Revenue Requirement of the petitioner after the assets are capitalized and subject to prudence check of cost incurred.

2.3. The approval is given subject to the above conditions and on the basis of submissions and statement of facts made by the Petitioner in the Petition under affidavit, therefore, violations of the condition and in case any information provided, if at any time, later on, is found to be incorrect, incomplete or relevant information was not disclosed, and which materially affects the basis for granting the approvals, in such cases the Commission may cancel the approval or refuse to allow the expenses incurred in the ARR/True-up apart from initiating plenary action.

Ordered accordingly.

Prabhat Kishor Dimri
Member (Technical)

(Anurag Sharma)
Member (Law)

(M.L. Prasad)
Chairman