

Before

UTTARAKHAND ELECTRICITY REGULATORY COMMISSION

Petition No. 69 & 70 of 2016

Petition No. 07 to 10 of 2017

In the matter of:

Approval of Capital Investments under Para 11 of the Transmission Licence involving following works:

- (a) Procurement and Stringing of 132 kV Roorkee-Laksar line by replacing existing Wolf/Panther conductor with ACCC (HTLS) Casablanca conductor.
- (b) Procurement and Stringing of 132 kV Roorkee-Manglore line by replacing existing Wolf/Panther conductor with ACCC (HTLS) Casablanca conductor.
- (c) Construction of 132/33 kV sub-station, Patanjali Padartha, Haridwar and LILO of 132 kV Chilla-Nazibabad line at 132/33 kV sub-station, Patanjali Padartha, Haridwar.
- (d) Replacement of ACSR wolf conductor in double circuit of Khatima-Pilibhit line by HTLS conductor.
- (e) Replacement of ACSR Panther Conductor in 132 kV Sitarganj (PGCIL)-SIDCUL Sitarganj single Circuit line with HTLS conductor
- (f) Replacement of ACSR Panther conductor in first circuit of 132 kV Kichha-Sitarganj Line with HTLS conductor.

And

In the Matter of:

Power Transmission Corporation of Uttarakhand Limited (PTCUL)

Coram

Shri Subhash Kumar Chairman

Date of Order: 6th April, 2017

ORDER

This Order relates to the Applications filed by Power Transmission Corporation of Uttarakhand Ltd. (hereinafter referred to as "PTCUL" or "the Petitioner") vide letter

Nos. 1853 /MD/PTCUL/UERC, 1854 /MD/PTCUL/UERC dated 11.11.2016, letter No.115/MD/PTCUL/UERC dated 20.01.2017 and letter Nos. 280 to 282/MD/PTCUL/UERC dated 13.02.2017 seeking approval of the Commission for the proposed investments involving new work and works of System Improvement under Para 11 of Transmission Licence [Licence No. 1 of 2003]

2. The estimated cost of the works proposed by the Petitioner is as follows:

Table 1: Project wise cost proposed by the Petitioner

Sl. No	Particulars	Substation/Transformer Capacity	Length of line (Km.)	Project Cost including IDC as per DPR (₹ Crore)
(a)	Procurement and Stringing of 132 kV Roorkee-Laksar line by replacing existing Wolf/Panther conductor with ACCC (HTLS) Casablanca conductor.	-	30.00	30.89
(b)	Procurement and Stringing of 132 kV Roorkee-Manglore line by replacing existing Wolf/Panther conductor with ACCC (HTLS) Casablanca conductor.	-	11.00	10.69
(c)	Construction of 132/33 kV sub-station, Patanjali Padartha, Haridwar and LILO of 132 kV Chilla-Nazibabad line at 132/33 kV sub-station, Patanjali Padartha, Haridwar.	2X40 MVA	6.82	83.96
(d)	Replacement of ACSR wolf conductor in double circuit of Khatima-Pilibhit line by HTLS conductor.	-	44.54	65.87
(e)	Replacement of ACSR Panther Conductor in 132 kV Sitarganj (PGCIL)-SIDCUL Sitarganj single Circuit line with HTLS conductor	-	22.00	20.99
(f)	Replacement of ACSR Panther conductor in first circuit of 132 kV Kichha-Sitarganj Line with HTLS conductor	-	31.50	29.79
	Total			242.19

3. The Petitioner has submitted copy of extracts of the 55th and 56th Minutes of BoD Meetings of PTCUL held on 27.09.2016 & 12.11.2016 respectively, wherein the Petitioner's Board has approved the Corporation's aforesaid proposals with a funding plan of 70% through loan assistance by financial institutions and balance 30% as equity funding from GoU.

4. The Commission has decided to club the proposed works for the purpose of according Investment Approval and accordingly, a single Order is being passed in this regard.

5. To justify the need of the works proposed, the Petitioner submitted that:

(a) Procurement and Stringing of 132 kV Roorkee-Laksar line by replacing existing Wolf/Panther conductor with ACCC (HTLS) Casablanca conductor.

According to the Petitioner, presently 132 kV S/s Laksar has installed capacity of 80 MVA (02 transformers of 40 MVA each). 132 kV S/s Laksar is radially connected to a single source i.e. 132 kV S/s Roorkee, by 132 kV Roorkee-Laksar line on Wolf and Panther conductor. The said line has also been tapped to supply 07 MVA load of Gold Plus which has now been enhanced to 15 MVA. The Petitioner has further contended that augmentation of 132 kV Laksar is also proposed by adding 01 No. 40 MVA transformer. According to the Petitioner the maximum current capacity of Wolf conductor is 350 Amp therefore, the said 132 kV line shall not be able to bear the proposed enhanced load of 132 kV Laksar sub-station (2X40 MVA to 3X40MVA) together with the load of Gold Plus. So PTCUL has contended that since there is no alternate supply to feed 132 kV S/s Laksar, as the alternate 132 kV line coming from Nahtaur (Uttar Pradesh) is maintained by UP Power Transmission Corporation Ltd. and is under break down since long, it is imperative that the conductor of 132 kV Roorkee-Laksar line, which is around 60 years old, be changed with high current carrying ACCC (HTLS) Casablanca conductor to avoid total supply failure at 132 kV Laksar S/s.

(b) Procurement and Stringing of 132 kV Roorkee-Manglore line by replacing existing Wolf/Panther conductor with ACCC (HTLS) Casablanca conductor.

According to the Petitioner, presently 132 kV S/s Manglore has installed capacity of 80 MVA (02 transformers of 40 MVA each). Additional load of around 20 MVA of Asahi glass and Air Liquide is also connected at 132 kV S/s Manglore. 132 kV S/s Manglore is radially connected to a single source i.e. 132 kV S/s Roorkee, by 132 kV Roorkee-Manglore line on Wolf and Panther conductor. According to the Petitioner the maximum load on 132 kV Roorkee-Manglore line is presently around 450 Amp whereas; the maximum current capacity of Wolf conductor is 350 Amp. Therefore, it is imperative that the conductor of 132 kV Roorkee-Manglore line, which is very old, be

changed with high current carrying ACCC (HTLS) Casablanca conductor to avoid total supply failure at 132 kV Manglore S/s.

(c) Construction of 132/33 kV sub-station, Patanjali Padartha, Haridwar and LILO of 132 kV Chilla-Nazibabad line at 132/33 kV sub-station, Patanjali Padartha, Haridwar.

The Petitioner has submitted that to provide relief to 132 kV sub-stations Laksar and Jwalapur, 2X40 MVA 132 kV S/s, Patanjali is being proposed. This sub-station shall be charged by LILO of 132 kV Chilla-Nazibabad line. According to the Petitioner around 46.70 MW load shall shift from 132 kV Jawalapur and Laksar Sub-stations to 132/33 kV sub-station, Patanjali Padartha, Haridwar thereby bringing relief to the already overloaded aforesaid Sub-stations. According to the Petitioner the land measuring 0.7125 hectare for construction of the sub-station and staff colony has been provided free of cost by Patanjali Ayurved Ltd. at village Padartha.

Petitioner has further contended that during N-1 contingency i.e. outage of 132 kV Chilla- Patanjali line, the proposed S/s shall be fed from 400/220/132 kV Srinagar through 132 kV Srinagar-Satpuli-Kotdwar-Patanjali line. Since the line is almost 140 km long, this shall result in low voltage problems at the sub-station. To solve the low voltage problems at the S/s under N-1 conditions, the Petitioner proposes to construct another 132 kV line to the proposed sub-station at Patanjali from a nearby 132 kV sub-station in near future.

(d) Replacement of ACSR wolf conductor in double circuit Khatima-Pilibhit line (44.54 kms) by HTLS conductor.

The Petitioner has submitted that LILO of one circuit of 132 kV Khatima-Pilibhit line has been made to charge 132 kV Sub-station Sitarganj. At 132 kV Sitarganj, 132 kV main Bus bar (single) is connected to 220/132 kV S/S PGCIL Sitarganj through two Circuits. In normal conditions the load of 132 kV Sitarganj is drawn from 220 kV sub-station of PGCIL. 132 kV sub-station Kichha is also connected to 132 kV Sitarganj through 132 kV Kichha- Sitarganj

line and in normal conditions 132 kV sub-station Kichha is also fed from 220 kV Sub-station PGCIL Sitarganj through 132 kV Sub-station Sitarganj.

The Petitioner has contended that during the failure of supply from 220/132 kV PGCIL Sitarganj, 132 kV Double circuit Khatima -Pilibhit line is the only dependable source of supply to 132 kV S/S Sitarganj , 132 S/s kV SIDCUL Sitarganj , 132 kV switchyard of Khatima power house of UJVN Ltd. and 132 kV Sub-station Kichha through 132 kV Pilibhit Sub-station of UPPTCL. Presently, the load drawn limit from 132 kV sub-station Pilibhit is restricted to only 150-200A due to the worn out condition of wolf conductor in the line. The 132 kV Khatima -Pilibhit line was commissioned in 1956 hence the ACSR wolf conductor is completely worn out and there are frequent incidents of conductor breakage due to which the supply reliability of Khatima, Sitarganj and Kichha area is greatly affected. The Petitioner has contended that this proposal of replacement of worn out ACSR Wolf conductor in 132 kV Khatima-Pilibhit double circuit line by HTLS conductor has been prepared to give greater supply reliability to Khatima, Sitarganj and Kichha area. Replacement of ACSR wolf conductor with HTLS conductor shall increase the load drawn limit on 132 kV Khatima-Pilibhit line to approximately 800 Amperes. Therefore, renovation and up-gradation of 132 kV Double circuit Khatima- Pilibhit line is imperative for maintaining reliability of supply in and around Khatima, Sitarganj and Kichha area.

(e) Replacement of ACSR Panther Conductor in 132 kV Sitarganj (PGCIL)-SIDCUL Sitarganj single circuit line with HTLS conductor.

The Petitioner has submitted that presently 132 kV Sitarganj (PGCIL)-SIDCUL Sitarganj line caters power to SIDCUL industrial area and nearby rural areas. In near future 132 kV SIDCUL Sitarganj-Kichha line shall get completed, after that there will be another source of supply to 132 kV Kichha sub-station through 132 kV Kichha-SIDCUL Sitarganj line. During emergency / power failure at 132 kV sub-station Kichha due to failure of either 132 kV Kichha-Sitarganj or 132 kV Kichha-Rudrapur line, 132 kV SIDCUL Sitarganj- Kichha line shall work as a backup source for 132 kV substation Kichha. Under such

conditions the load of 132 kV Kichha sub-station and 132/33 SIDCUL Sitarganj sub-station shall be catered by 132 kV Sitarganj (PGCIL)-SIDCUL Sitarganj line. Presently, this line is on ACSR Panther conductor, which limits the capacity of the line to 400 Amps. As a result 132 kV single circuit PGCIL Sitarganj - SIDCUL Sitarganj line will not be able to cater to the load of 132 kV substation SIDCUL Sitarganj and 132 kV Substation Kichha simultaneously. Hence to overcome this situation it is necessary to enhance the capacity of 132 kV single circuit PGCIL Sitarganj- SIDCUL Sitarganj line by replacing the Panther conductor by higher current carrying HTLS conductor.

(f) Replacement of ACSR Panther conductor in first circuit of 132 kV Kichha-Sitarganj line with HTLS conductor.

According to the Petitioner, 132 kV D/C Kichha-Sitarganj line connects 132 kV S/s Kichha with 132 kV S/s Sitarganj. Under normal conditions, 132 kV S/s Kichha is fed from Sitarganj through 132 kV Kichha-Sitarganj line. Presently, the transformer capacity at 132 kV S/s Kichha is 2x40 MVA. Transformers installed at 132 kV Substation Kichha are already overloaded and during peak hours/peak season local roasting has to be done to avoid the overloading of transformers. To avoid load shedding due to over loading of transformers in future and also to satisfy T-1 contingency of transformer, augmentation of Kichha S/s from 2x40 MVA to 3x40 MVA has already been proposed. With the augmentation of 132 kV S/s Kichha, 132 kV Kichha-Sitarganj line which is on Panther conductor shall not be able to carry the full load of the sub-station, therefore it is imperative that ACSR Panther conductor in first circuit of 132 kV Kichha-Sitarganj line is replaced with high current carrying HTLS conductor to avoid frequent break downs in the line.

Commission's observations, Views and Decision

6. It has been observed that:

- (i) In support of aforesaid justifications given by the Petitioner the proposed works are acceptable. However, on examination of the proposals, it has also been observed that while preparing the estimate for construction of 132/33 kV sub-station, Patanjali Padartha, Haridwar and LILO of 132 kV Chilla-

Nazibabad line, the Petitioner in addition to contingency and cost of establishment, audit & accounting has added quantity variation and cost escalation @ 20% in the estimate. In the absence of any justified reasons for including quantity variation and cost variation in the estimate, the Commission is not considering the same as of now.

(ii) The Petitioner in the estimates prepared for replacement of Panther/Wolf Conductor with HTLS Conductor has included the amount of crop compensation in the main estimate and has applied contingency charges, audit & supervision charges on it. Contingency charges @3% and audit & supervision charges @15% have not been allowed on the amount claimed against crop compensation.

7. Based on the above, against the Petitioner's proposed capital investment of an outlay of ₹242.19 Crore, the Commission hereby grants in-principle approval for the expenditure of ₹218.25 Crore only as per Table 2 given below with the direction that the Petitioner should go ahead with the aforesaid works subject to fulfillment of the terms & conditions mentioned in Para 8 below.

Table 2: Project wise cost proposed by the Petitioner vis-a-vis cost considered by the Commission

Sl. No.	Particulars	Substation/Transformer Capacity	Length of line (Km.)	Project Cost including IDC as per DPR (₹ Crore)	Cost considered by the Commission (₹ Crore)
(a)	Procurement and Stringing of 132 kV Roorkee-Laksar line by replacing existing Wolf/Panther conductor with ACCC(HTLS) Casablanca conductor.	-	30.00	30.89	30.83
(b)	Procurement and Stringing of 132 kV Roorkee-Manglore line by replacing existing Wolf/Panther conductor with ACCC (HTLS) Casablanca conductor.	-	11.00	10.69	10.67
(c)	Construction of 132/33 kV sub-station, Patanjali, Padartha, Haridwar and LILO of 132 kV Chilla-Nazibabad line at 132/33 kVsub-station, Patanjali Padartha, Haridwar.	2X40 MVA	6.82	83.96	60.31
(d)	Replacement of ACSR wolf conductor in double circuit of Khatima-Pilibhit line by HTLS conductor.	-	44.54	65.87	65.78
(e)	Replacement of ACSR Panther Conductor in 132 kV Sitarganj (PGCIL)-SIDCUL Sitarganj single Circuit line with HTLS conductor.	-	22.00	20.99	20.93
(f)	Replacement of ACSR Panther conductor in first circuit of 132 kV Kichha- Sitarganj Line with HTLS conductor.	-	31.50	29.79	29.73
	Total			242.19	218.25

8. Terms and conditions subject to which in-principle approval granted by the Commission are as follows:

- (i) The Petitioner should ensure that the material received back from the site is fully accounted in the as executed estimate where ever applicable.
- (ii) The Petitioner should go for the competitive bidding for obtaining most economical prices from the bidders.
- (iii) All the loan conditions as may be laid down by the funding agency in their detailed sanction letter are strictly complied with. However, the Petitioner is directed to explore the possibility of swapping this loan with cheaper debt option available in the market.
- (iv) The Petitioner shall, within one month of the Order, submit letter from the State Government or any such documentary evidence in support of its claim for equity funding agreed by the State Government or any other source in respect of the proposed schemes.
- (v) After completion of the aforesaid schemes, the Petitioner shall submit the completed cost and financing of the schemes.
- (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.

Ordered accordingly.

(Subhash Kumar)
Chairman