GOVT. OF JAMMU AND KASHMIR

ELECTRIC M&RE WING LEH & KARGIL

PDD

REVISED DETAILED PROJECT REPORT UNDER PMRRP-2015

FOR

CONSTRUCTION OF TRANSMISSION NETWORK UNDER PMRRP SCHEME IN LEH AND KARGIL DISTRICTS (LADAKH REGION) J&K

Submitted By: Chief Engineer, Gen/EM&RE Wing Leh & Kargil

Brief description

Transmission Line in Leh & Kargil Districts:-

A: Leh, District

Present power network in the Leh district comprises of 66KV transmission network of total circuit length 158.08 Km constructed under RGGVY Phase-I. Power in this transmission network is mainly pumped from 3x15MW Alchi, HEP. For power evacuation through 66KV transmission network, 5Nos, 66/11KV sub-stations are in operations and one test charged on Dec 2015 which are located at different load centers in the district having total transformation capacity of 50.40MVA. The Peak load demand in the area fed from Alchi power house during winter period is 20.50MW and in summer season peak demand is 12.50MW which is comparatively bit lower than in winter period during which heating appliances remain switch off. Therefore, there is power demand deficit of approx. 32.5MW on 45MW Alchi, HEP during which discharge in the rivers remains at its peak level.

For providing 24x7 power supply to villages in Nubra, transmission lines at 132 KV & 66KV voltage level and 132/33KV, 66/11KV Grid/Sub-Stations have been proposed at load centers Diskit, under "Transmission Plan" & Distribution network under "Distribution Plan", DDUGJY, 24x7 power for all schemes.

Part-B

Thus surplus power available from Alchi power house could not be evacuated due to non-connectivity of transmission networks in areas such as Nubra. The Nubra valley of Leh District is 120Km away from Leh town, the total population of the Nubra valley is 22433 as per census 2011 comprising of 28 villages, including 4 No. of un-electrified villages. The power to the valley at present power is being provided through 27 No's of D.G sets for 5-6 hours in the evening hours with the installed capacity of 2.765 MVA besides Mini Hydro Electric Power houses. The LREDA is also providing electricity to remote area through solar plants capacity is 0.08MW..

PRESENT POWER SCENARIO OF NUBRA:

S.No	Name of D.G Station	Rating	No of consumer	Sanction load
1	Diskit I Diskit II Diskit III	1x750 KVA 1x250 KVA 1x160 KVA	1181	1200 KW
2	Turtuk	1x160 KVA	250	239.5 KW
3	Panamik	1x160 KVA	258	278.3 KW
4	Bogdang	1x160 KVA	221	169.9 KW
5	Chamshen	1x75 KVA	172	168.5 KW
6	Tagger	1x320 KVA	310	297.4 KW

7	Tyakshi	1x160 KVA	137	34.25 KW
8	Charasa	1x30 KVA	69	17.25 KW
9	Kuri	1x30 KVA	39	9.75 KW
10	Murgi	1x15 KVA	17	4.25 KW
11	Tongsteth	1x30 KVA	56	14 KW
12	Nungsteth	1x15 KVA	20	5 KW
13	Khemi	1x30 KVA	26	6.5 KW
14	Gonbo	1x15 KVA	4	1 KW
15	Burma	1x15 KVA	15	3.75 KW
16	Chulungkha	1x35 KVA	40	10 KW
17	Hundri	1x35 KVA	51	12.75 KW
18	Udmaru	1x35 KVA	65	16.25 KW
19	Tangyar	1x35 KVA	40	10 KW
20	Khalsar	1x25 KVA	26	6.5 KW
21	Khardong	1x125 KVA	110	27.5 KW
22	Waris	1x40 KVA	38	38 KW
23	Tsati	1x30 KVA	29	7.25 KW
24	Khema	1x25 KVA	20	5 KW
25	Gradi	1x5 KVA	7	1.75 KW
	Total:	2765 KVA	3201	2584.35 KW

Expected load growth after connecting network on hydro Power

- Total Un restricted load of 3201 Consumers of all categories except Belt forces/SSI/Army = 9.28 MW
- Load of Belt forces =7.73 MW
- Load of 4 nos. of un electrified villages =0.19 MW
- Load of upcoming SSI units =80 units x 10 KW =0.80 MW

Total **= 18.00 MW**

PRESENT POWER SCENARIO OF LEH:

Power from Hydro Electric Project having capacity of 3x15 MW NimoBazgo HEP is evacuated and supplied to various areas Leh District through following 66/11 KV Sub- stations.

S.NO.	Name of Substation with Capacity	Present Peak Load	Winter Peak Load
1	2X 6.3 MVA, 66/11 KV sub- station Leh	9.00 MW	11.00 MW
2	2X 6.3 MVA, 66/11 KV Sub-Station Kharu	2.40 MW	5.50 MW

3	1X 6.3 MVA, 66/11 KV Sub-Station Khalsi	0.90 MW	1.00 MW
4	1X 6.3 MVA, 66/11 KV Sub-Station Alchi	0.50 MW	0.70 MW
5	1X 6.3 MVA, 66/11 KV Sub-Station Nimo	1.20 MW	2.50 MW
6	1X6.3 MVA, 66/11 KV Sub-station Hemia.	Test charged on Dec. 2015	Evacuation still to be completed

Note:- Due to in completions in RGGVY Phase-Ist works, desired Load evacuation has not been possible so far.

S.NO.	MINI HYDRO ELECTIRC PROJECT	Present Load	Winter Peak Load
1	2X1.5 MW Igo Mercellong HEP	0.80 MW	Shut Down due to freezing
2	2X200 KW Hunder HEP	0.150 MW	NIL
3	2X150 KW Bazgo HEP	0.08 MW	0.08 MW
4	2X50 KW Sumoor HEP	0.06 MW	NIL

New proposal of Hydro Power Projects by JKPDC

a. 9x1 MW new Hydro Project at Hanu. (Under Construction)
b. 9x1 MW new Hydro Project at Dha. (Under construction)

Note: MHEP's of JKSPDC operate from May to November except Baazgo HEP whose one unit remains operational during winters.

DG Stations:-

Total No. DG sets/installed capacities of DG sets in the District = 73 Nos./ 22.40 MVA

Presently No./KVA of DG sets in operation. = 45 Nos./ 5.60 MW

DG sets operational in winters = 45 Nos./ 5.60 MW

Total Distribution Transformer in Leh District = 576 Nos./ 55.56 MVA

Present Load in Nubra (Restricted) = 2.584 MW

66kv=158.08 KM

11kv line= 1890.30 KM

LT line = 1733KM

B: Kargil District:-

Present power network in the Kargil district comprises of 66KV transmission network of total circuit length 93.1Km constructed under RGGVY Phase-I. Power in this transmission network is mainly pumped from 4x11MW Chutuk, HEP. For power evacuation through 66KV transmission network, 05 No 66 /11 KV Receiving stations are in operation .All 05 Nos, 66/11KV sub-stations are located at different load centers in the district having total transformation capacity of 37.8MVA. The Peak load demand in the area fed from Chutuk power house during winter period is 18.8MW and in summer season peak demand is 12.5MW which is comparatively lower than in winter period during which heating appliances remain switched off. Therefore, there is power demand deficit of approx. 31.5 MW on 44MW Chutuk, HEP during which discharge in the rivers remains at its peak level.

Thus surplus power available from Chutuk power house could not be evacuated due to non-connectivity of transmission networks in the areas such as Zanskar, The Zanskar valley of Kargil district is 234km away from Kargil town, the total population of the Zanskar valley is 15216 as per census 2011 comprising of 29(including 4nos. of un-electrified villages).The power to the valley, at present power is being provided through 09 no's of D.G sets for 5-6 hours in the evening with the installed capacity of 2.32MVA.The KREDA is also providing electricity to remote area through solar plants, 0.355 mw.

Present Power Scenario of Zanskar:

S.No	Name of D.G Stn.	Rating	No of consumer	Avg. load
1-	Padum	2x250 KVA	490	245 KW
2-	Abran	1x380 KVA	215	53.75 KW
3-	Phey	1x380 KVA	304	152 KW
4-	Sani	1x160 KVA	153	76.5 KW
5-	Jumkhor	1x160 KVA	178	86.5 KW
6	Karsha	1x380 KVA	362	181 KW
7	Zangla	1x200 KVA	72	18 KW
	Total :-	2160 KVA	1769	812.75 KW

Power Supplied through Micro Hydel Project:-

S.No	Name of Power House	Installed capacity	Avg. load
1-	SaniHaftal	2x500 KW	0.881 MW
	Total :-	1.00 MW	0.881 MW

Expected load growth (on Hydro) at zanskar

- Total consumer 1769 at average load of 2KW = 9.30 MW
  Including for hospital, school, state/centre Govt. Offices
- Load of Para military force = 0.03 MW
- Load of consumers presently on Solar power 454 no's = 0.90 MW
- Load of 4 no's un electrified villages with 379
  Consumers at average load @1 KW/ each = 0.90 MW.

Total =11.14 MW

New HEP of JKPDC

- 95 MW new Hydro Projects at Panikhar/Namsuru (source of Power to Zanskar) which is tendered out as per JKSPDC.

PRESENT POWER SCENARIO OF KARGIL DISTRICT

Power from Chutuk Hydro Electric Project having capacity of 4x11 MW is evacuated and supplied to various areas through 66/11 KV Sub- stations.

S.NO.	Name of Substation with Capacity	Present Peak Load	Winter Peak Load (Restricted)
1	2X 6.3 MVA, 66/11 KV sub- station Kurbathang.	5.4 MW	8.4 MW
2	1X 6.3 MVA, 66/11 KV Sub-Station Gramthang.	1.800 MW	2.64 MW
3	1X 6.3 MVA, 66/11 KV Sub-Station Sankoo.	0.700 MW	0.55 MW
4	1X 6.3 MVA, 66/11 KV Sub-Station Khangral.	0.450 MW	0.70 MW
5	1X 6.3 MVA, 66/11 KV Sub-Station Shargole.	0.500 MW	0.45 MW

Note:- Due to in completions in RGGVY Phase-Ist works, desired Load evacuation has not been possible so far.

Besides Chutak Hydro Electric Project in Kargil Mini Hydro Electric Projects of JKSPDC also supply Power in some localities.

S.NO.	MINI HYDRO ELECTIRC PROJECT	Present Load	Winter Peak Load
1	3x1.25 MW IQBAL AT KARGIL TOWN	Maximum load supplied = 1.5 MW	1.0 MW
2	2X0.500 MW HAFTAL AT ZANSKAR	Average=0.45 MW	NIL
3	3X0.420 MW SANJAK AT SHAKAR CHIKTAN AREA	Operational=0.84 MW	NIL
4	3X0.250 MW MARPACHOO AT DRASS	One Unit Operational=0.25MW	NIL

Note: - MHEP's of JKSPDC operate from May to November except Iqbal MHEP whose one unit remains operational during winters.

DG Stations:-

Total No. DG sets/installed capacities of DG sets in the District = 60 Nos./15.770 MVA

Presently No./KVA of DG sets in operation. = 22 Nos./4.54MW

DG sets operational in winters = 29 Nos./6.67 MW

Total Distribution Transformer in Kargil District = 440Nos./35.865 MVA

66 KV Line = 93.01 KM

11 KV line = 791.00 KM

LT line =1368 KM

The surplus power available from 4x11 MW Chutuk Power House and 45 MW NimoBasgo Power House could not evacuate due to non connectivity of Transmission line either to Nubra/Zanskar area or to Kashmir. Since 220 KV single circuit transmission line is under construction by Power Grid Corporation of India, the power can be evacuated through this Transmission line and to evacuate power from newly under construction power Stations at Zanskar/Nubra and to provide huge load growth in the area.A proposal submitted in CEA where in , in Kargil district 20 MVA, 132/33KV Grid Sub Station at Padum and 2x3.15MVA, 33/11 KV Receiving Sub-Stations each at Raru and Phey with 30 and 21Kms 33 KV Transmission line respectively are proposed with 20MVA, 66/132 KV grid station at Namsuru along 132 KV 138kms transmission line from Namsuru to Zanskar and in Leh district 20MVA, 66/132 KV grid station at Phyang (Nubra) along with 20MVA 132/33/11 KV grid station at Diskit Nubra along with 132 KV Transmission line having length of 100Km from Phyang to Nubra.

PGCIL is constructing 220 KV line from Alesteng Srinagar to Leh via Drass-Kargil-Khaltsi on fast track and expected to be completed by 2018, which will compensate the power shortage of Leh & Kargil district in winter and excess power generation can be exported to the valley in summer moreover shall also stabilize the power supply in the region throughout the year.

The proposed transmission line to Nubra and Zanskar shall benefit the people of these border villages bordering with Pakistan and China & to provide Grid connectivity to Zanskar during harsh weather conditions when accessibility /connectivity to this areas is not there for about six months the defense installations located in these border areas of Ladakh region shall also be benefited by reducing pollution and expenditure incurred for operation and maintenance for running of DG Sets. Moreover power supply to these areas round the clock instead '5-6 hours at present.

During course of discussions, in various meetings held with CEA no of observations/comments raised by CEA & replied by PDD, finally CEA Technically vetted the Transmission Plan & advised for submission of Revised DPR for Ladakh Region considering CEA suggestion of 220KV Transmission Line instead of 132KV proposed in DPR & approved copy of SSR for vetting cost mentioned in DPR.

Accordingly, Revised Proposal amounting Rs 342Cr has been framed based on CEA suggestions & approved schedule of rates of cost data 2016-17 for vetting by CEA.The scheme cost is Rs.342Cr and with cost escalation is Rs.354.74Cr.

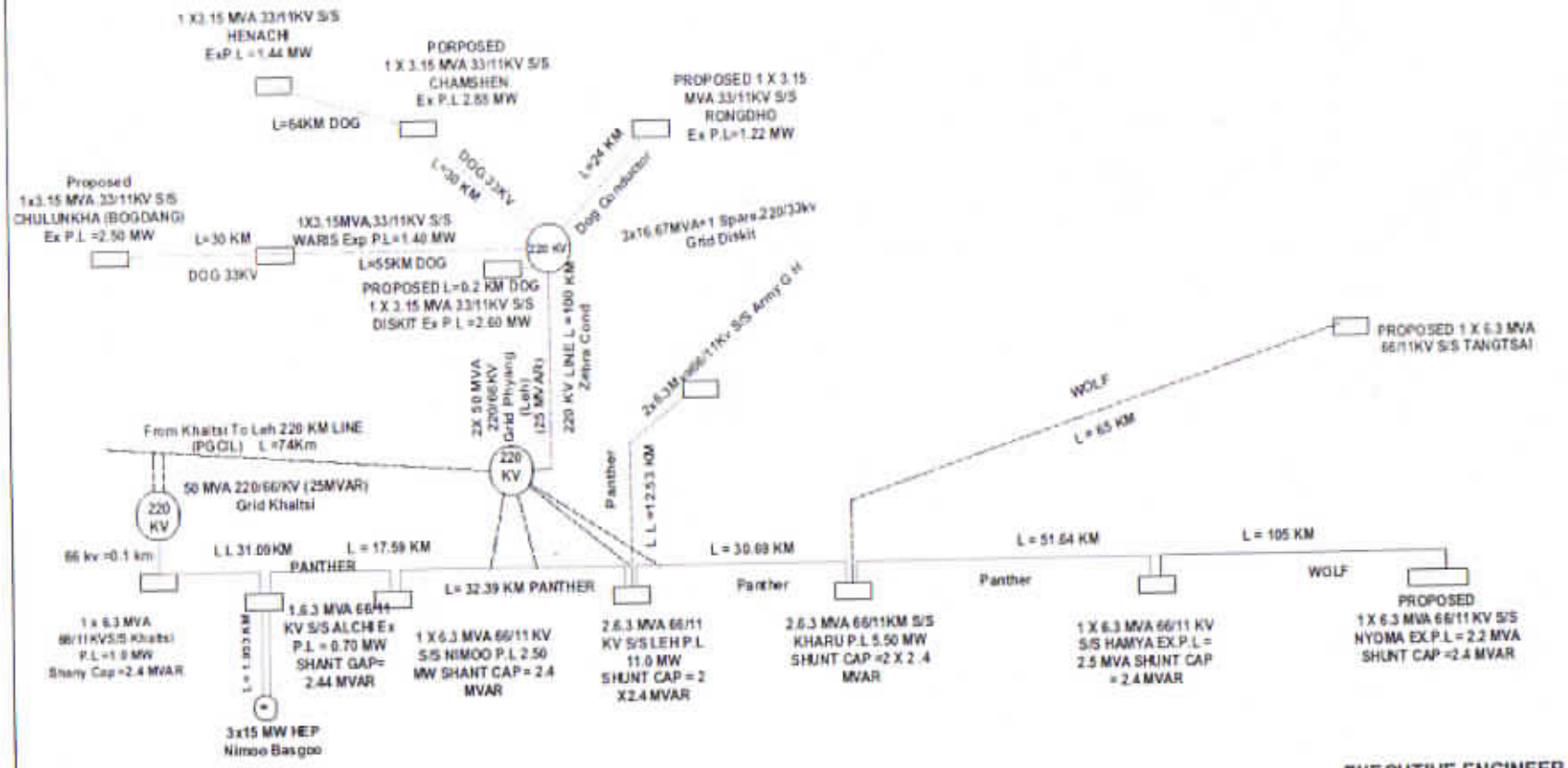
Executive Engineer
STD, Leh

Executive Engineer
STD, Kargil

Superintending Engineer
EM&RE Circle, Leh& Kargil

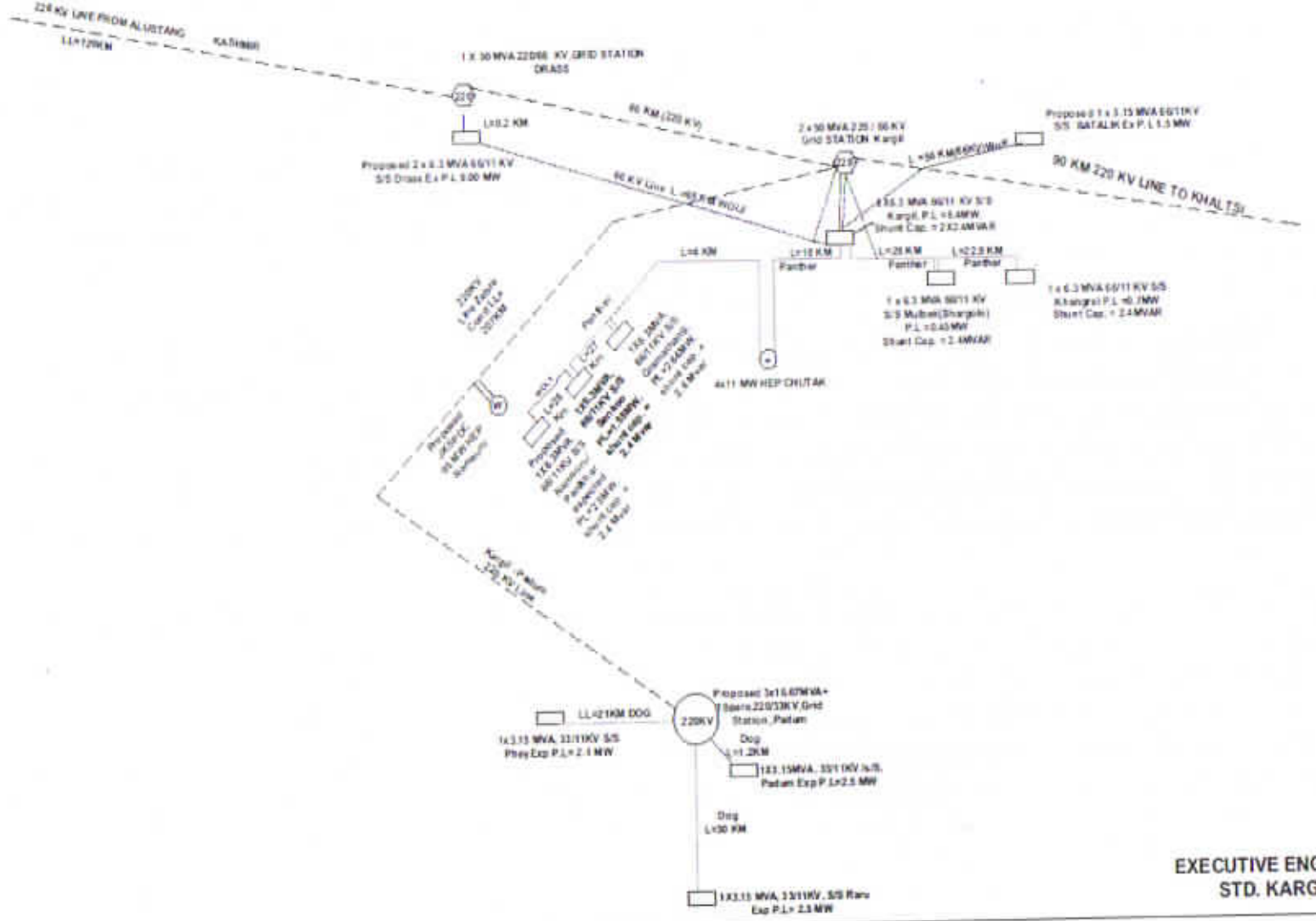
Chief Engineer
Generation, EM&RE wing Leh & Kargil

SINGLE LINE DIAGRAM SHOWING 220KV, 66KV , 11KV LINES AND SUB-STATIONS OF LEH DISTRICT



EXECUTIVE ENGINEER
STD. LEH

SINGLE LINE DIAGRAM SHOWING 220KV, 66KV , 11KV LINES AND SUB-STATION OF KARGIL DISTRICT



EXECUTIVE ENGINEER
STD. KARGIL

Comments on PMRRP-2015 DPR of Leh and Kargil sent on Oct-3, 2016 by CEA and reply thereoff by JKPDD		
S.no	Comments	Reply
1.	Cost of 25 MVAR bus reactor at Padum alongwith 220 KV bay has been considered Rs 420.98 Lacs which is not mentioned in the approved schedule of Rates(SoR) of JKPDD. Source of the cost may be mentioned.	25 MVAR bus reactors is being used in the state by PDD for first time, cost of line bay is 295.98 Lacs as per SoR, attached as Annexure "A" & cost of bus reactor is 125 lacs based on tentative estimation & enquires made from PGCIL/Suppliers/manufacturers.
2.	Cost of Single Phase Auto Transformer (16.67 MVA,220/33KV) at Phyang(Nubra) and Padum(Zangskar) S/S has been considered Rs 9.38 Lacs which is not mentioned in the approved SoR.	In Kashmir PMRRP-2015 cost estimation for 160 MVA,220/33KV G/s lassipora, wherein cost of single phase 53.33MVA, 220/33KV Transformer is 500 Lacs and attached as annexure "B". So per MVA cost workout to be Rs 9.3755 lacs that is 9.38 Lacs/MVA and has been considered in the cost estimation for single phase, 16.67 MVA, 220/33KV Auto Transformer in Disket (Nubra)Leh & Padum(Zanskar)Kargil.
3.	In 'COST ESTIMATION FOR CONSTRUCTIONAL OF 50 MVA(3X16.67MVA+1 Spare),220/33KV, GRID SUBSTATION, DISKET (NUBRA), COST OF 33/11kv SUB STATIONS alongwith Line bays and 33 Kv Transformer bays for 220/33 KV transformer have been considered which has already been covered in DDUGJY and PMDP sheme .	In Deskit (Nubra) cost estimation for construction of 50 MVA (3x16.67 MVA + 1 Spare), 220/33 KV, grid Sub Station Deskit(Nubra), Provision for only one 33KV line bay for 33/11KV, sub-station, Deskit has been kept, whereas cost of 6 Nos, 3.15 MVA, 33/11KV sub-stations along with 33KV lines & their line bays have been kept under DDUGJY/Distribution Plan(PMDP Schemes) & not kept in this abstract estimate for Transmission Plan-2015. (Revised DPR)
4.	In 'COST ESTIMATION FOR CONSTRUCTIONAL OF 50 MVA(3X16.67MVA+1 Spare),220/33KV, GRID SUBSTATION, PADUM(ZANGSKAR), cost of '3 Nos of 33KV Line bays alongwith 33KVLines and 33/11Kv S/S have been considered which has already been included in distribution Plan under PMDP.	In Padum (Zanskar) cost estimation for construction of 50 MVA (3x16.67 MVA + 1 Spare), 220/33 KV , grid Sub Station Padum(Zanskar), provision for only one 33KV line bay of 33/11KV Sub-Station Padum has been considered whereas cost of 3 Nos, 3.15MVA, 33/11KV Sub-Station along with 33KV Lines & Line bays have been kept in Distribution Plan(PMDP Scheme) and not kept in the abstract estimate for Transmission Plan-2015(revised DPR)

5.	Cost of Common Miscellaneous works of 220/33KV Grid Station has been considered Rs 467.00 Lacs which is the cost of Common Miscellaneous works of 220/132 KV Grid Station.	There is no difference between common Misc works of 220/132KV & common Misc works of 220/33 KV Grid Stations. In SoR common Misc works of 220/132KV Grid Station are approved and its cost is Rs 467 Lacs and the same is considered in our proposal for 220/33KV Grid station Nubra & Padum and attached as Annexure "C".
6.	Cost of Common Civil works of 220/33Kv /Grid Station has been considered Rs 913.24 Lacs which is not mentioned in the SoR. Source of the cost may be	There is no difference of common civil works of 220/132KV Grid station and common civil works of 220/33KV Grid station. However in SoR 220/132KV Grid station cost is approved and its cost is 1913.24Lacs for rural area's including cost of land for which 1000 Lacs have been kept in SOR. But at both the places Govt land is available free of cost for construction of Grid Station at Nubra and Zanskar, so provision of Rs 1000 Lacs was deducted from Rs 1913.24 Lacs which comes out to be Rs913.24 Lacs . Attached Annexure "D".
7.	Phasing of the expenditure and escalation factor as given in PMRRP-2015 DPRs of Kashmir has not been done.	Phasing of expenditure has been done and attached but the cost escalation factor as given in PMRRP-2015 DPR's of Kashmir has not been done in Leh & Kargil and is attached as Annexure "E".
8.	The hard copy of PMRRP-2015 DPR for Leh & Kargil along with hard copy of approved and signed SoR may kindly be provided.	The hard copy of PMRRP-2015 Revised DPR for Leh & Kargil alongwith hard copy of approved /signed SoR is enclosed.

Executive Engineer
Sub-Transmission Division Leh
PDD, Choglamsar Leh

Executive Engineer
Sub-Transmission Division Kargil
PDD, Kargil

Superintending Engineer
Electric M&RE Circle
PDD, Leh - Ladakh

Government of Jammu & Kashmir

Office of the Chief Engineer Generation/EM&RE Wing Leh & Kargil (Choglamsar Leh).

E-mail: cegenleh@gmail.com Tel/Fax No:01982-265525

The Director,
I/C SETD CEA, Sewa Bhawan
Ministry of Power,
R.K. Puram, New Delhi.

No. CE/EM&RE/Ladakh/ Dated:- /10/2016.

Subject:- Revised DPR for Transmission Plan under PMRRP Scheme in Leh and Kargil Districts.

Sir,

In continuation to this office letter No. CE/EM&RE/Ladakh/1421-24, dated:- 13/10/2016 it is further clarified with regard to point No. 3 of comments on PMRRP-2015 DPR of Leh & Kargil dated October 3rd, 2016 replied by PDD that "cost estimation of 3x16.67 MVA + 1 spare of the 220/33KV Grid station at Disket (Nubra)" involves cost of sub-items like 220KV Line Bay, 220KV Bus Coupler Bay, Auxiliary Neutral and Tertiary Buses, 220KV Transformer Bay, 220KV Transfer Bus Bay, 3X16.67 MVA + 1 Spare Transformer, 33KV Line Bay, 33KV Bus Coupler Bay, 33KV Transformer Bay (33KV side of 220/33KV Transformer), 33KV Auxiliary Bay, construction of auxiliary sub-station, Misc. work of 220/33KV Grid station, common civil work of 220/33KV Grid Station and are covered in Transmission Plan under PMRRP-2015. Whereas for evacuation of power from the above mentioned Grid Station, all 6 Nos., 33/11KV Sub-Stations, line Bays and 33KV Lines, 11KV lines are covered in Distribution Plan/DDUGJY Scheme.

As stipulated in your comments on PMRRP-2015, that cost of 33/11KV Sub-Station alongwiith Lines Bays and 33KV Bay for 220/33KV Transformer have been considered which has already been covered in DDUGJY/PMDP Scheme, **that is not the case**.

As explained above, it is further submitted and clarified that 220/33KV Grid Stations are not the part of Distribution Plan/DDUGJY Scheme however 220/33KV Grid Stations are kept in Transmission Plan-2015 DPR. The sub items of 220/33KV Grid Stations as explained above i.e cost of 33KV Line Bay, Bus Coupler Bay, 33KV Transformer Bay and 33KV Auxiliary Bay for 220/33KV transformer itself is part of Grid Station and are not kept in any other plan like Distribution Plan under PMDP/DDUGJY Scheme, so their cost shall be considered as a part of "cost estimation for construction of 50MVA, 220/33KV Grid Station at Disket (Nubra)" under "Transmission Plan 2015 DPR Revised" on the similar pattern adopted in 50MVA, 220/33KV Grid Station at Padum (Zanskar).

The 33KV Line bay of 220/33KV Grid Station would be to interconnects the 220/33KV Grid station Diskit/Padum with the 33/11KV Sub Station Diskit/padum through a 33 KV Line on gantary structure. Presently only one interconnections is sufficient to meet the load requirement. In future based on load growth more interconnections would be taken up.

With regard to Point No. 7 it is further replied that the cost of the scheme is 341.09 crore without cost escalation (corrected copy annexed as Annexure-1) and with cost escalation is 354.74 crore (copy annexed as Annexure-2), moreover phasing has been done.

With regard to point No. 2 it is further clarified that estimated cost of 16.67MVA, 220/33 Single phase Transformer works out to be 16.67x9.38 lacs/MVA= 156.36 lacs whereas in Global Tender Contract of PGCIL to KEC of 1x50MVA, 220/66KV GIS, Grid Station Khaltsi. Cost of 16.67MVA, 220/66KV, Single Phase Power Transformer works out to be Rs. 279.11 lacs (copy annexed as Annexure-3). Hence the cost of single Phase Transformer projected by PDD is lesser than that awarded contract of PGCIL.

Also as desired, the Single line Diagram of proposed (3x16.67 + 1 Spare), 220/33KV Grid Station, Disket/Padum is annexed as Annexure-4 for your kind perusal.

Hence submitted for favour of information & further necessary action at your end please.

Yours faithfully,

Chief Engineer,
Gen/EM&RE Wing Leh & Kargil

Copy to the:-

1. Development Commissioner (Power), PDD Srinagar, J&K alongwith copies of reporting documents for favour of information and necessary action
2. Superintending Engineer EM&RE Circle Leh for favour of information.

Government of Jammu & Kashmir

Office of the Chief Engineer Generation/EM&RE Wing Leh & Kargil (Choglamsar Leh).

E-mail: cegenleh@gmail.com Tel/Fax No:01982-265525

The Director,
I/C SETD CEA, Sewa Bhawan
Ministry of Power,
R.K. Puram, New Delhi.

No. CE/EM&RE/Ladakh/1460-62 Dated:- 21/10/2016.

Subject:- Revised DPR for Transmission Plan under PMRRP Scheme in Leh and Kargil Districts.

Sir,

In continuation to this office letter No. CE/EM&RE/Ladakh/1421-24, dated:- 13/10/2016 it is further clarified with regard to point No. 3 of comments on PMRRP-2015 DPR of Leh & Kargil dated October 3rd, 2016 replied by PDD that "cost estimation of 3x16.67 MVA + 1 spare of the 220/33KV Grid station at Disket (Nubra)" involves cost of sub-items like 220KV Line Bay, 220KV Bus Coupler Bay, Auxiliary Neutral and Tertiary Buses, 220KV Transformer Bay, 220KV Transfer Bus Bay, 3X16.67 MVA + 1 Spare Transformer, 33KV Line Bay, 33KV Bus Coupler Bay, 33KV Transformer Bay (33KV side of 220/33KV Transformer), 33KV Auxiliary Bay, construction of auxiliary sub-station, Misc. work of 220/33KV Grid station, common civil work of 220/33KV Grid Station and are covered in Transmission Plan under PMRRP-2015. Whereas for evacuation of power from the above mentioned Grid Station, all 6 Nos., 33/11KV Sub-Stations, line Bays and 33KV Lines, 11KV lines are covered in Distribution Plan/DDUGJY Scheme.

As stipulated in your comments on PMRRP-2015, that cost of 33/11KV Sub-Station alongwiith Lines Bays and 33KV Bay for 220/33KV Transformer have been considered which has already been covered in DDUGJY/PMDP Scheme, **that is not the case**.

As explained above, it is further submitted and clarified that 220/33KV Grid Stations are not the part of Distribution Plan/DDUGJY Scheme however 220/33KV Grid Stations are kept in Transmission Plan-2015 DPR. The sub items of 220/33KV Grid Stations as explained above i.e cost of 33KV Line Bay, Bus Coupler Bay, 33KV Transformer Bay and 33KV Auxiliary Bay for 220/33KV transformer itself is part of Grid Station and are not kept in any other plan like Distribution Plan under PMDP/DDUGJY Scheme, so their cost shall be considered as a part of "cost estimation for construction of 50MVA, 220/33KV Grid Station at Disket (Nubra)" under "Transmission Plan 2015 DPR Revised" on the similar pattern adopted in 50MVA, 220/33KV Grid Station at Padum (Zanskar).

The 33KV Line bay of 220/33KV Grid Station would be to interconnects the 220/33KV Grid station Diskit/Padum with the 33/11KV Sub Station Diskit/padum through a 33 KV Line on gantary structure. Presently only one interconnections is sufficient to meet the load requirement. In future based on load growth more interconnections would be taken up.

With regard to Point No. 7 it is further replied that the cost of the scheme is 341.09 crore without cost escalation (corrected copy annexed as Annexure-1) and with cost escalation is 354.74 crore (copy annexed as Annexure-2), moreover phasing has been done.

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Also as desired, the Single line Diagram of proposed (3x16.67 + 1 Spare), 220/33KV Grid Station, Disket/Padum is annexed as Annexure-4 for your kind perusal.

Hence submitted for favour of information & further necessary action at your end please.

Yours faithfully,

Chief Engineer,
Gen/EM&RE Wing Leh & Kargil

Copy to the:-

1. Development Commissioner (Power), PDD Srinagar, J&K alongwith copies of reporting documents for favour of information and necessary action
2. Superintending Engineer EM&RE Circle Leh for favour of information.

Cost Estimate for Approved Transmission Plan for PMRRP-2015 of Leh & Kargil Districts. **Annexure-1**

Leh District

S.No	Description	Unit	Qty	Rate	Amount In Lacs
A	**New 220kV Line Bay**				
	220 KV line Bat at 2x50MVA,220/33KV S/S Phyang (PGCIL)LEH For 220 KV Phyang-Disket Tr.Line	No	1	295.98	295.98
B	**New 220kV Tr. Line**				
1	220kV TL from S/S Phyang (PGCIL) to Diskit (Nubra) S/C line on D/C towers.	Km	100	84.59	8459
C	**New 220/33kV Sub Station**				
1	50 MVA (3 x 16.67 MVA + 1 Spare) ,220/33kV S/S at Diskit (Nubra) { 33/11kV Sub Stations alongwith line bays and 33kV lines are covered in DDUGJY/PMDP scheme)	No	1	3563.9	3563.9
				Total	**12318.88**

Kargil District

S.No	Description	Unit	Qty	Rate	Amount in Lacs
A	**New 220kV Line Bay**				
1	220kV line bay at 2x50 MVA,220/66kV S/S Kargil (PGCIL) for 220kV Kargil-Padum tr. Line	No	1	295.98	295.98
B	**New 220kV Tr. Line**				
1	220 kv tr. Line from S/S Kargil to Padum(Zanskar) S/C line on D/C Towers	Km	207	84.59	17510.13
C	**New 220/33kV Sub Station**				
1	50 MVA (3 x 16.67 MVA + 1 Spare) ,220/33kV S/S at Padum (Zanskar).[3 Nos of 33kV line bays alongwith 33kV lines and 33/11kv s/s included in Distribution Plan under PMDP]	No.	1	3563.9	3563.9
D	**25 MVAR bus reactor at Padum alongwith 220kV bay**	No	1	420.98	420.98
				Total	**21790.99**
				G TOTAL	**34109.87**

Superintending Engineer
EM&RE Circle Leh

Chief Engineer
Gen/M&RE Leh&Kargil

Cost abstract of the schemes under PMRRP for the year 2016-17, 2017-18 & 2018-19 in respect of Leh& Kargil Wing, (Annex-E)

S. No.	Name of the Scheme / Project	Scheme cost	Priority-I			Remarks
			Proposed Outlay 2016-17	Proposed Outlay 2017-18	Proposed Outlay 2018-19	
		(Rs. in Lacs)				
[A]	Infrastructure at 220 KV Level					
1	Construction of 50 MVA (3 x 16.67 MVA + 1 Spare) ,220/33kV grid S/S at Diskit (Nubra) along with allied Trans. Lines.&line bay at Phyang	12318.88	4928	4928	2462.88	
2	Construction of 50 MVA (3 x 16.67 MVA + 1 Spare) ,220/33kV grid S/S at Padam(ZANSKAR) along with allied Trans. Lines.&line bay at Kargil &25Mvar Reactor at padam	21790.99	8716	8716	4358.99	
		34109.87	13644	13644	6821.87	

Executive Engineer
S T D-LEH

Superintending Engineer
EM&RE,Circle-LEH

Chief Engineer
Gen/M&RE Leh&Kargil

Cost abstract of the schemes with Escalations and Phasing under PMRRP for the year 2016-17,2017-18 & 2018-19 in respect of Leh & Kargil Wing **Annexure-2**

S.No	Name of the Scheme/Project	Scheme Cost	Priority-I						
			Proposed Outlay 2016-17	Proposed Outlay 2017-18	Proposed Outlay 2017-18 with 5% escalation	Proposed Outlay 2018-19	Proposed Outlay 2018-19 with 5% escalation	Total cost of scheme without cost escalation	Total cost of scheme with cost escalation
(A)	Infrastructure at 220 KV Level								
1	Constrcution of 50 MVA (3x16.67 MVA+1 Spare),220/33KV Grid S/S at Diskit(Nubra)along with allied Tr.Lines & Line Bay at Phyang	12318.88	4928	4928	5174.4	2462.88	2709.168	12318.88	12811.568
2	Constrcution of 50 MVA (3x16.67 MVA+1 Spare),220/33KV Grid S/S at Padum(Zanskar)along with allied Tr.Lines & Line Bay at Kargil & 25 Mvar Reactor at Padum.	21790.99	8716	8716	9151.8	4358.99	4794.88	21790.99	22662.68
		34109.87	**13644**	**13644**	**14326.2**	**6821.87**	**7504.048**	**34109.87**	**35474.248**

sd/-
Executive Engineer
STD-Leh

sd/-
Superintending Engineer
EM&RE, Circle Leh

Chief Engineer
Gen/EM&RE Wing Leh & Kargil

Development Commissioner (Power)
Power Development Department
J&K Jammu / Srinagar

COST ESTIMATION FOR CONSTRUCTION OF 50MVA(3x16.67MVA+1 spare), 220/33 KV, GRID SUB STATION, DISKET.(NUBRA)

(Amount in lacs)

S.No	Item of Work	Unit	Qty	Unit Cost	Amount
A: GRID SUB STATION					
1	220KV Line Bay	No	1	295.98	295.98
2	220KV Bus Coupler Bay	No	1	258.40	258.40
3	Aux.,Neutral & Tertiary buses.	No	1	220.18	220.18
4	220KV Transformer Bay	No	1	259.78	259.78
5	220 KV Transfer Bus Bay	No	1	227.53	227.53
6	Transformer 50MVA (3x16.67MVA+1 spare)	MVA	66.67	9.38	625.36
8	33KV Line Bay	No	1	68.68	68.68
9	33KV Bus Coupler Bay	No	1	69.78	69.78
10	33KV Transformer Bay (33 KV side of 220/33KV Transformer)	No	1	69.20	69.20
11	33KV Aux. Bay	No.	1	66.16	66.16
12	Construction of Auxilary Sub Station	Job	1	22.61	22.61
13	Common Miscellaneous works of 220/ 33 KV Grid Station	Job	1	467.00	467.00
14	Common Civil works of 220/ 33 KV Grid Station	Job	1	913.24	913.24
				TOTAL	3563.90

Executive Engineer
S T D-LEH

Superintending Engineer
EM&RE,Circle-LEH

Chief Engineer
Gen/M&RE Leh&Kargil

COST ESTIMATION FOR CONSTRUCTION OF 50MVA93X16.67 MVA+1 SPARE),220/33 KV,GRID SUB-STATION,PADUM (ZANSKAR)

(Amount in Lacs)

NO	Item of Work	Unit	Qty	Unit Cost	Amount
	A:GRID SUB STATION				
1	220KV Line Bay	No	1	295.98	295.98
2	220KV Bus Coupler Bay	No	1	258.40	258.40
3	Aux.,Neutral & Tertiary buses.	No	1	220.18	220.18
4	220KV Transformer Bay	No	1	259.78	259.78
5	220 KV Transfer Bus Bay	no	1	227.53	227.53
6	Transformer 50 MVA(3x16.67 MVA+1 Spare)	MVA	66.67	9.38	625.36
7	33KV Line Bay (Double Main with 4 Isolators Scheme)	No	1	68.68	68.68
8	33KV Bus Coupler Bay	No	1	69.78	69.78
9	33KV Transformer Bay	No	1	69.20	69.20
10	33KV Station Auxiliary Bay	No	1	66.16	66.16
11	Auxiliary Transformer (Platform mounted)	Job	1	22.61	22.61
12	Common Miscellaneous works of 220/ 33 KV Grid Station	Job	1	467.00	467.00
13	Common Civil works of 220/ 33 KV Grid Station (Rural Areas)	Job	1	913.24	913.24
	TOTAL			**Total**	**3563.90**

Executive Engineer	**Superintending Engineer**	**Chief Engineer**
STD-Leh	**'EM&RE, Circle, PDD Leh**	**Gen/EM&RE Wing Leh & Kargil**

COST ESTIMATION FOR CONSTRUCTION OF 160MVA,220/33kV (GIS) GRID SUB STATION LASSIPORA (Annexure-B)

Amount in Rs. Lacs

S.No	Item of Work	Unit	Qty	Unit Cost	Amount
1	220kV Line Bay (LILO of WMTL D/C)	No	4	384.77	1539.08
2	220kV Bus Coupler Bay	No	1	335.92	335.92
3	220kV Transformer Bay	No	1	337.71	337.71
4	220 kV Transfer Bus Bay	No	1	295.79	295.79
5	Aux.,Neutral & Tertiary buses.	No	1	286.23	286.23
6	Single Phase Auto Transformer (53.33 MVA, 220/33kV)	No	4	500.00	2000.00
7	33kV Line Bay (Double Main With Three Isolator Scheme)	No	6	88.55	531.30
8	33kV Bus Coupler Bay	No	1	90.71	90.71
9	33kV Transformer Bay	No	1	89.96	89.96
10	33kV Station Auxiliary Bay	No	1	86.00	86.00
11	Auxiliary Transformer (Platform mounted)	job	1	22.61	22.61
12	Common Miscellaneous works of 220/33kV Grid Station	Job	1	467.00	467.00
13	Common Civil works and Air conditioning System of 220/33kV Grid Station	Job	1	983.67	983.67
	TOTAL				**7065.98**

COST ESTIMATION FOR CONSTRUCTION OF ...

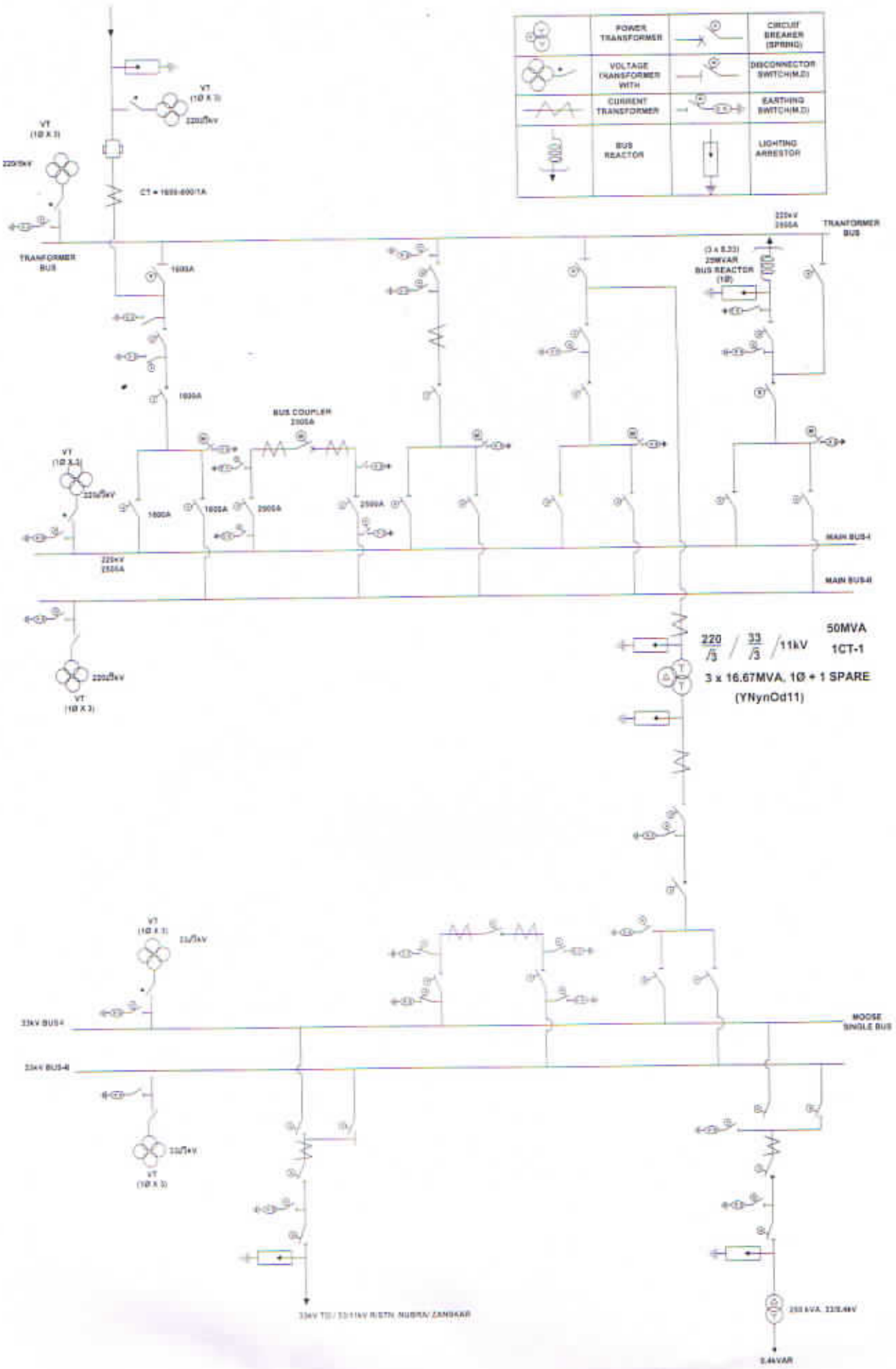
(Amount in Lacs)

S.NO	Item of Work	Unit	Qty	Unit Cost	Amount
	A:GRID SUB STATION				
1	220KV Line Bay	No	1	295.98	295.98
2	220KV Bus Coupler Bay	No	1	258.40	258.40
3	Aux ,Neutral & Tertiary buses	No	1	220.18	220.18
4	220KV Transformer Bay	No	1	259.78	259.78
5	220 KV Transfer Bus Bay	no	1	227.53	227.53
6	Transformer 50 MVA(3x16.67 MVA+1 Spare)	MVA	66.67	9.38	625.36
7	33KV Line Bay (Double Main with 4 Isolators Scheme)	No	1	68.68	68.68
8	33KV Bus Coupler Bay	No	1	69.78	69.78
9	33KV Transformer Bay	No	1	69.20	69.20
10	33KV Station Auxiliary Bay	No	1	66.16	66.16
11	Auxiliary Transformer (Platform mounted)	Job	1	22.61	22.61
12	Common Miscellaneous works of 220/ 33 KV Grid Station	Job	1	467.00	467.00
13	Common Civil works of 220/ 33 KV Grid Station (Rural Areas)	Job	1	913.24	913.24
	TOTAL			**Total**	**3563.90**

Executive Engineer	**Superintending Engineer**	**Chief Engineer**
STD-Leh	**'EM&RE, Circle, PDD Leh**	**Gen/EM&RE Wing Leh & Kargil**

COMMON MISCELLENEOUS WORKS OF 220 / 132 KV GRID STATION. (Anex-C)					
S.No.	Particulars	Unit	Quantity	Rate	Amount (Lacs)
1	Battery Bank				
1.1	220 Volt DC Battery Bank maintenance free.	Set	2	15.00	30.00
1.2	48 Volt DC Battery Bank maintenance free.	Set	1	3.00	3.00
2	Battery Charger				
2.1	220 Volt	No	1	5.00	5.00
2.2	48 Volt	No	1	2.00	2.00
3	DC Distribution Board				
3.1	220 Volt	No	1	2.00	2.00
3.2	48 Volt	No	1	1.00	1.00
4	AC Distribution Board	No	1	15.00	15.00
5	250 KVA Automatic Voltage Stablizer	No	1	7.00	7.00
6	Power cables for AC/DC network in Control room	Lot	1	10.00	10.00
7	Const. power with avg. 5 KM 33kV line ,transformer and electricity charges.	Job		50.00	50.00
8	Event Logger, Disturbance Recorder & GPS System with PC	No	1	20.00	20.00
9	Internal Communication-Telephone/Net working	LS		2.00	2.00
10	RTU panel for SCADA	No	1	6.00	6.00
11	Circuit Breaker Operation Analyzer	No	1	5.00	5.00
12	Winding Resistance Measurement- Micro Ohm Meter	Set	1	3.00	3.00
13	Tan Delta testing kit	Set	1	20.00	20.00
14	Transformer oil testing kit.	Set	1	25.00	25.00
15	Air Conditioning /Central Heating	Job	Job	30.00	30.00
16	High Mast Yard Lighting With HPSV Lamps With 12 Fittings & Feeder Pillars Having Timers For Automatic On-Off	No	6	6.00	36.00
17	125 KVA DG Set	No	1	20.00	20.00
18	Fire Fighting System.				
18.1	Nitrogen Injection Fire fighting system	Job	1	100.00	100.00
19	High Vacuum Filtration Plant 6000 Lit/Hour	No	1	25.00	25.00
20	Light motor vehicle.	No	1	10.00	10.00
21	Mobile Crane 20 MT	No	1	40.00	40.00
	TOTAL				**467.00**

COMMON CIVIL WORKS OF 220 / 132 KV GRID STATION . (Annexure-D)					
				Amount In Rs Lacs	
S.No.	Particulars	Unit	Quantity	Rate	Amount
A	**Land and Its Development**				
1	Land for station, colony etc.**(Rural areas)**	Kanal	100	NIL	0.00
2	Land for station, colony etc.**(Urban areas)**	Kanal	NA	NA	NA
3	Compound Walling Of the Grid Sub Station	Job	L/S	92.01	92.01
4	Development of land (Leveling construction of retaining wall etc)	Job	L/S	60.00	60.00
5	Chain Link Fencing around switch yard	Sqm	1600	0.02	32.00
6	Ornamental works such as development of lawns and landscaping	Job	L/S	10.00	10.00
7	LT Distribution and street lighting	Job	L/S	20.00	20.00
B	**Buildings & Roads**				
1	Control Room Building	Sft	8000	0.02	152.35
2	Divisional Office Building	Sft	2500	0.02	53.67
3	Temp Store Shed and Guard Room	Job	L/S	15.00	15.00
4	Diesel Generator Room	Sft	200	0.01	2.40
5	Residential Quarters				
5.1	Xen's Qtr (1 No 1500 Sfts Single Storey)	Sft	1500	0.021	32.20
5.2	AEE/AE's Qtr (1 No 1300 Sfts.Single Storey)	Sft	1300	0.021	27.91
5.3	JEs Qtrs (4x2 Sets Double storey 2500Sfts)	Sft	2500	0.033	82.00
5.4	SBA's Qtrs(12x2 Sets Double storey 3600 Sfts.)	Sft	3600	0.033	118.07
5.5	Site Office (1 No 700 Sfts) Single Storey	Sft	700	0.02	15.03
6	Roads for colony / yards	Sqm	7500	0.02	118.60
7	Water supply incl.tube well reserviors etc.	Job	Job	47.00	47.00
8	Santry/Security Posts	LS	L/S	5.00	5.00
9	Construction Of Outdoor Gantry For 33 KV	LS	L/S	8.00	8.00
10	Estabishment of workshop facility	LS	L/S	15.00	15.00
11	Providing Of Cabin & Control Desk	LS	L/S	7.00	7.00
	TOTAL FOR RURAL AREAS.				**913.24**


POWER TRANSFORMER
CIRCUIT BREAKER (SPRING)
VOLTAGE TRANSFORMER WITH
DISCONNECTOR SWITCH(M.O)
CURRENT TRANSFORMER
EARTHING SWITCH(M.O)
BUS REACTOR
LIGHTING ARRESTOR
VT (1Ø X 3)
CT = 1600-800/1A
TRANFORMER BUS
1600A
BUS COUPLER 2500A
MAIN BUS-I
MAIN BUS-II
50MVA
1CT-1
3 x 16.67MVA, 1Ø + 1 SPARE
(YNynOd11)
33kV BUS-I
33kV BUS-II
MOOSE SINGLE BUS
PROJECT:
SINGLE LINE DIAGRAM
220/33kV GRID SUB-STATION, NUBRA/ZANSKAR:

GIS Package - GIS2 for 220kV Khalsi & 220kV Leh Substations under Consultancy Project of Power Development Department, J&K

An × – 3

[illegible]

Sl. No.	Item Description	Unit	Qty.	Unit Ex-Works Price	Total Ex-Works Price	Mode of Transaction
(1)	(2)	(3)	(4)	(5)	(6)=(4) X (5)	(7)
I	220/66kV GIS Khalsi Substation					
	PART - I POWERGRID ASSESSED QUANTITIES					
A	POWER TRANSFORMER					
a)	[illegible] Single Phase Power Transformer [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
b)	[illegible] the above Power Transformer	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
c)	[illegible] Oil [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
d)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
e)	Digital [illegible] Panel [illegible] heater.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
f)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B	LT Transformer					
a)	800KVA 11/0.433 kV	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C	245kV EQUIPMENT					
C1	245KV Outdoor Equipment					
1.1	216 KV Surge Arrester (1-phase)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1.2	245KV Bus post Insulator (1-Phase)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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GIS PACKAGE – GIS2 for 220 KV Leh Substations under Consultancy Project of Power Development Department, J&K

(Detailed Price Break-up of Plant and Equipment (including mandatory spare parts) to be supplies from within India)

S.No	Item Description	Unit	Qty.	Unit Ex-Works Price	Total Ex-Works Price	Mode of Transaction
(1)	(2)	(3)	(4)	(5)	(6)= (4) x (5)	(7)
I	220/66KV GIS Khalsti Substation					
	PART – I POWERGRID ASSESSED QUANTITIES					
A	POWER TRANSFORMER					
a)	16.67MVA, 220/ √3. / 66// √3 / 11 KV Single Phase Power Transformer (without transformer Oil)	Nos	4	22,144,826	88,579,304	BOUGHT OUT
b)	Insulating oil for the above Power Transformer	Lot	1	1,872,646	7,490,584	BOUGHT OUT
c)	On line Insulating Oil Drying System (As per Technical Specification)	Sets	1	1,532,575	6,130,300	BOUGHT OUT
d)	Oil Strange Tank of 10 KL	Nos	2	1,411,197	2,822,394	BOUGHT OUT
e)	Digital RTCC Panel consist of 4 Nos digital RTCC, relays (panels shall have provision of mounting 5 nos digital RTCC relays as per technical specification	Sets	1	8,600,776	8,600,776	BOUGHT OUT
f)	Nitrogen Injection type Fire Protection system including underground oil tank	Sets	4	2,361,353	9,445,412	BOUGHT OUT
B	L/T Transformer					
a)	800KVA 11/0.433 KV	Nos	2	1,959,123	3,918,246	BOUGHT OUT
C	245KV EQUIPMENT					
C1	245KV Outdoor Equipment		9	119,942	1,079,478	
1.1	216KV Surge Arrester	Nos	2	58,054	2,264,106	BOUGHT OUT
1.2	245KV Bus post Insulator (1-Phase)	Nos				BOUGHT OUT