



General Stamp Office, Mumbai
महाराष्ट्र MAHARASHTRA
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 L.S.V. No.....

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2 MAR 2005

श्री. प्रमोद श. भोसले
 परवाना, धारक, सुद्रांक, विक्रेता, 70 D/10
 जे. व्ही. विल्डींग, सेंट्रल अफिस बिल्डिंग, रॉयल, मुंबई - १९.
 क्रमांक 70 दिनांक **4 MAR 2005**
 सर्वश्री/श्री/श्रीमती
NPCIL DGM Commercial
 याना रु.

Proper Officer

243 POWER PURCHASE AGREEMENT

BETWEEN

NUCLEAR POWER CORPORATION OF INDIA LIMITED

AND

UTTAR PRADESH POWER CORPORATION LIMITED

FOR

NARORA ATOMIC POWER STATION AND RAJASTHAN ATOMIC POWER STATION

NARORA

RAWATBHATTA

[Signature]
 परवाना धारक, सुद्रांक विक्रेता

This AGREEMENT entered into on this ~~Seventeenth~~ day of ~~March~~ , Two thousand five (17/03/2005) at Mumbai , between Nuclear Power Corporation of India Limited (A Govt. of India Enterprise) wholly owned by the Central Government, a public sector company incorporated under the Companies Act, 1956, having its registered office at 16th Floor, Center-I, World Trade Center, Cuff Parade, Colaba, Mumbai - 400 005 hereinafter referred to as 'NPCIL', (which expression shall, unless repugnant to the context, include its representatives, successors and assigns) as party of the first part AND

UTTAR PRADESH POWER CORPORATION LIMITED created under Uttar Pradesh Electricity Reforms Act, 1999 HAVING HEAD OFFICE AT Shakti Bhawan, 14 Ashok Marg, Lucknow- 226 001 hereinafter referred to as 'UPPCL', (which expression shall unless repugnant to the context include their representatives, successors and assigns) as party of the second part.

[Handwritten signatures]

WHEREAS the NPCIL have set up nuclear power station within the country in general and within the northern region in particular, including the one at (1) **The Narora Atomic Power Station**, set up at Narora, Bulandshahar District, Uttar Pradesh, originally designed with an installed nominal capacity of 470 MWe, & subsequently derated to 440 MWe, consisting of two units each of 220 MWe, the first unit of the two units of the Power Station has been declared commercial since January 1, 1991 and the second unit has been declared commercial since July 1, 1992, (2) **The Rajasthan Atomic Power Station 2** at Kota, Rajasthan, originally designed for an installed nominal capacity of 220 MWe, and subsequently derated to 200 MW, has been declared commercial operation on 1.4.1981 and (3) **The Rajasthan Atomic Power Station 3&4** at Kota, Rajasthan, designed for an installed capacity of 440 MWe consisting of two units each of 220 MWe, the unit-3 of the Power Station was declared commercial on 1.6.2000 and the Unit-4 was declared commercial on 23.12.2000. **HEREINAFTER** referred to collectively as '**Power Stations**';

AND WHEREAS capacity of the Power Stations, as a whole, shall be allocated amongst the Bulk Power Beneficiaries as per allocations made by the Ministry of Power, Government of India, from time to time;

AND WHEREAS, NPCIL have earlier entered into Bulk Power Supply Agreement with different Electricity Boards which are valid for different periods;

AND WHEREAS, it is now agreed and understood, between the parties that separate 'power supply agreement' with each of the Bulk Power Beneficiaries needs to be signed and executed;

AND WHEREAS NPCIL agrees for sale of power from the Power Stations after meeting all its requirements of the Nuclear Power Stations as well as the facilities owned by the Department of Atomic Energy, Government of India, in the Northern Region.

NOW, therefore, in consideration of the premises and mutual covenants and conditions set forth herein, it is hereby agreed by and between the parties hereto as follows:

1. DEFINITIONS

The words/expressions used in this Agreement unless repugnant to the context shall have the same meaning as assigned to them under Electricity Act, 2003 [Act 36 of 2003] as may be amended from time to time and the Rules framed thereunder. The words/expressions mentioned below shall have the same meanings respectively as assigned hereunder:

1. ACT : Shall mean the Electricity Act 2003 as modified, amended or restated from time to time.
2. AUXILIARY POWER: Shall mean energy consumed by Auxiliaries of CONSUMPTION the Power Station required for generation of power
3. BULK POWER Shall mean the various State Electricity Boards BENEFICIARIES or and entities in the Northern Region to whom BULK POWER power is supplied by NPCIL, including the CUSTOMERS UPPCL.
4. CEA : Shall mean Central Electricity Authority constituted under the Act.
5. CHARGES FOR : Shall mean and include all charges to be paid SUPPLY OF ENERGY by Bulk Power Beneficiaries in respect of supply of power to them by the Power Stations in accordance with the provisions of this agreement.
6. CHECK IMPORT / : Shall mean Meter for maintaining a check on EXPORT METER performance of Main Import/Export meter.
7. DAE : Shall mean Department of Atomic Energy
8. GOI : Shall mean Government of India
9. LC : Shall mean Irrevocable revolving Letter of Credit.
10. MAIN IMPORT : Shall mean Meter for measurement of active / METER reactive energy import at the Power Stations Bus Bars for energy accounting and billing purposes.
11. MAIN EXPORT : Shall mean Meter for measurement of active / METER reactive energy export at the Power Stations Bus Bars for energy accounting and billing purposes.
12. NREB : Shall mean Northern Regional Electricity Board.
13. NR transmission Shall mean transmission network owned, system/Grid maintained and operated by the PGCIL and the Bulk Power Beneficiaries Northern Region operating in a synchronous/integrated mode.

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14. NRLDC : Shall mean Northern Regional Load Despatch Center
15. PGCIL : Shall mean Power Grid Corporation of India Ltd.
16. POWER STATIONS : Shall mean Narora Atomic Power Station 1&2, Rajasthan Atomic Power Station 2,3&4
17. REGIONAL ENERGY ACCOUNTING : Shall mean Periodic Energy Account including amendments thereof, if any, prepared by NREB as per mutually accepted procedure in vogue
18. RVPN : Rajasthan Rajya Vidyut Prasaran Nigam Ltd.
19. TRIPARTITE AGREEMENT : Agreement signed between GoI, State Govt. and RBI under scheme for one time settlement of State Electricity Board dues.

2.0 **ALLOCATION OF CAPACITY**

2.1 Allocation of power from the Power Station namely NAPS-1&2 & RAPS-2, 3,4 shall be as per allocation indicated by Ministry of Power/Government of India from time to time which at present as indicated by MOP/CEA orders No. 5/NR/CSA/GM/2004/3057 dtd.21.09.04 and No.5/NR/CSA/2004 dated 21.09.04 is as given below: -

| NAME OF THE STATE/ UT | ALLOCATION (In MWe) | | |
|-----------------------|---------------------|--------|-----------|
| | NAPS 1&2 | RAPS-2 | RAPS-3 &4 |
| Chandigarh | 5 | | 0 |
| Delhi | 47 | | 0 |
| Haryana | 28 | | 48 |
| Himachal Pradesh | 14 | | 0 |
| Jammu & Kashmir | 33 | | 35 |
| Punjab | 51 | | 100 |
| Rajasthan | 44 | 200 | 125 |
| Uttar Pradesh | 138 | | 66 |
| Uttaranchal | 16 | | 0 |
| Unallocated | 64 | | 66 |
| Total | 440 | 200 | 440 |

2.2 The entitlement of the actual electrical energy output of the Power Stations shall be in the ratio of the above allocation and also the allocation to be made by the Government of India, in respect of unallocated power from time to time among the Bulk Power Beneficiaries after meeting all the Power Stations requirements as well as for the facilities belonging to and owned by the Department of Atomic Energy, Government of India in the Northern Region.

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3.0 **POWER SUPPLY FROM THE POWER STATIONS**

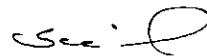

- 3.1 The power to UPPCL shall be supplied using the transmission network owned, maintained and operated by the PGCIL and the Bulk Power Beneficiaries subject to demonstrable system constraints and payment of transmission/wheeling charges as per the established guidelines of the competent authority under the act as amended from time to time followed in the Northern Region.
- 3.2 The Power Stations shall feed its output into the UPPCL (NAPS1&2) / NR transmission system, at the respective power stations 220 KV Switchyard. The UPPCL shall regulate their drawl in accordance with the entitlement/allocation as per para 2.1 strictly or as may be modified/changed by the MOP, Govt. of India.
- 3.3 The UPPCL shall at all times endeavor to take all the power, which the Power Stations are in a position to send out. However, in the event of over frequency conditions, the UPPCL would regulate their generation as per the NREB/NRLDC guidelines, the Power Stations would be requested to regulate its generation as a last resort to the extent feasible for the Power Stations consistent with safety.

4.0 **SYSTEM OF SUPPLY**

- 4.1 The supply of electrical energy to the Bulk Power Beneficiaries shall be in the form of three phases, alternating current, at a nominal frequency of 50 Hertz and at a potential of 220 KV subject to the variation limits permitted by the Indian Electricity Grid Code as approved by the competent authority under the Act as amended from time to time. The UPPCL/ Bulk Power Beneficiaries shall take all measures expeditiously to restore the frequency within the limits as stipulated in the Indian Electricity Grid code as amended from time to time concurrent with the directions of NREB/NRLDC if any.
- 4.2 'Power Factor', shall mean 'the ratio expressed as percentage of the kilowatt hours to the kilovolt ampere hours supplied during any period and it shall not at any time be less than 85 percent lagging'. The UPPCL/Bulk Power Beneficiaries shall without involving the NPCIL into any liability take such steps as may be necessary to prevent the power factor of its off take from falling below the said limit of 85 percent lagging.

5.0 **POINT OF DELIVERY / ENERGY, METERING AND ACCOUNTING**

The point of delivery of electrical energy shall be the 220 KV outgoing feeders from the respective Power Stations, where supply shall be metered at 220 KV as per the memorandum of instructions for the assessment of energy sold, appended as Annexure-A to this deed of Agreement.

6.0 AUXILIARY POWER REQUIREMENTS OF THE POWER STATION

- 6.1 If, at any time, the Power Stations are unable to meet its own auxiliary power requirements and/or requirements of other facilities belonging to the Department of Atomic Energy, Government of India in the Northern Region, full requirement of power as and when required by the Power Stations and other facilities of the Department of Atomic Energy, Government of India shall be made available by the Bulk Power Beneficiaries at 220 KV as required by the Power Stations. The power (energy) so supplied will be adjusted against the energy supplied by the Power Stations to the UPPCL (NAPS) or Bulk Power Beneficiaries in subsequent months as per the existing practice agreed upon.
- 6.2 The Utilities/ Bulk Power Beneficiaries in whose area the Power Stations are located, shall ensure as per existing agreed practice the reliable start up power to the extent required from two independent sources of the interconnected NR transmission system.

7.0 RATES OF SUPPLY

- 7.1 It is agreed between NPCIL & UPPCL that the charges for supply of energy shall be as per the tariff notification issued by DAE, Government of India from time to time in accordance with Atomic Energy Act, 1962 (Act 33 of 1962) as amended from time to time. The tariff rate so fixed shall be subject to the fuel and heavy water adjustment charge as advised by DAE from time to time. Variations in effective rates as a result of the fuel cost adjustment charges and heavy water cost adjustment charge shall not be deemed to be a change or revision of the tariff.
- 7.2 The Bulk Power Beneficiaries including the UPPCL shall reimburse to NPCIL, modification in respect of the decommissioning provision component of the tariff rate or any levy in respect of nuclear energy as may be notified by the Department of Atomic Energy from time to time or any other such impositions, and these shall not be deemed to be a revision of the tariff.
- 7.3 In the event of any additional investment made with the approval of DAE, towards the modification of the Power Stations facilities, to meet the safety requirements, the tariff will be revised as per notification issued by the Government of India. However, in case of any additional investments towards modifications / improvement of operational efficiency, the UPPCL/Bulk Power Beneficiaries shall be consulted and informed.
- 7.4 As on date the tariff Notification issued by DAE for the power stations are .
1. No.1/2(12)/03-Power/124 for Rajasthan Atomic Power Station 2,3 &4 dated 10.02.2004 (copy enclosed)
 2. No.1/2(12)/03-Power/271 for Narora Atomic Power Station 1&2 dated 08.04.2003 (copy enclosed)

7.5 TAXES, LEVIES, DUTIES, CESS, ETC.

- 7.5.1 The above tariff is exclusive of any statutory taxes, levies, duties, cess or any other kind of impositions(s) whatsoever imposed/charged by any Government (Central/State) and/or any other local bodies/authorities on generation of electricity excluding auxiliary consumption or on any other types of consumption, transmission, sale or on supply of power/energy and/or in respect of any of its installations associated with Generating Stations and/or on Transmission System.
- 7.5.2 The total amount of such taxes/duties/cess etc. payable by NPCIL to the authorities concerned in any month on account of the said taxes/duties/cess etc. as referred to above, shall be borne and additionally paid by the UPPCL to NPCIL and the same shall be charged in the monthly bills raised by NPCIL in the proportion of energy drawal by UPPCL from NPCIL.
- 7.5.3 Incidence of tax liability on NPCIL as per Income Tax Act in force from time to time shall be recovered from the UPPCL/Bulk Power Beneficiaries duly certified by the Statutory Auditors of NPCIL. The Income Tax allocated to UPPCL/Bulk Power Beneficiaries will be in proportion to their energy drawal during the year to which the Income Tax pertains.

8.0 **BILLING AND PAYMENTS**

- 8.1 The UPPCL shall pay to NPCIL all bills for energy supplied to it by the Power Stations as well as the bills for the interest charges, if any, levied through letter of credit (LC) as per clauses 8.2.1, 8.2.2 and 8.2.3 below on presentation of such bills by the Power Stations, in accordance with various provisions of this agreement. The procedure for assessment of supply of energy shall be as laid down in the memorandum of instructions appended as Annexure-A to this Agreement and also referred in clause 5.0.
- 8.1.1 NPCIL shall present the bills after the end of each calendar month for energy supplied to UPPCL from the Power Stations on the basis of the Regional Energy Account issued by NREB. The date of presentation of the bill shall be deemed to be the sixth day from the date of issue of the bill.
- 8.1.2 Such bills shall be in accordance with the tariff rates in force. If there are no tariff rates in force in any period, the Bulk power beneficiaries shall pay in accordance with the latest valid notified tariff rates. When the tariff rates for the relevant period is decided, the UPPCL shall make payments, on presentation of the bills by the Power Stations, towards the differential amounts. Such payment shall be adjusted (either by the UPPCL or by the NPCIL) in accordance with applicable tariff rates as per para 7.0 above.

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- 8.1.3 The monthly bill for the power stations shall be aggregate charges in accordance with the provisions of the Agreement. If for certain reasons, some of the charges cannot be included in the main monthly bills, the power stations will raise supplementary bill(s) for such amounts.
- 8.1.4 If the amount of bill is more than the amount of LC, NPCIL will prepare two bills, one bill equal to the amount of LC and the supplementary bill for the balance amount for direct payment by the UPPCL within 30 days from the date of presentation of bill.
- 8.1.5 The bill(s) of NPCIL shall be paid promptly, subject to the condition that :-
- a) There is no apparent arithmetical error in the bill(s).
 - b) The bill(s) is/are claimed as per tariff referred to in clause 7.0.
 - c) They are in accordance with the regional energy accounts issued by NREB.
- 8.1.6 If the revision of any bill is necessitated due to any revision of Regional Energy Account, the Power Stations shall carry out consequential adjustments, in its subsequent energy bills.
- 8.1.7 In the event of any error in the bills coming to the notice of UPPCL shall, within 30 days of the date of presentation of the relevant invoice, communicate the same to NPCIL in writing, stating the amount disputed and the full reasons/data and reasons of dispute, provided, however that non-acceptance of the tariff determined /approved by DAE/other competent authority shall not be a valid ground for the dispute.
- 8.1.8 UPPCL shall pay the entire bill in respect of which an error is noticed in accordance with 7.0. The Power Stations will modify the bill, if found necessary, in consultation with NREB and shall refund any amount overcharged with an interest calculated @0.041% per day (15% p.a.) from the date of receipt of amount to the date of refund to the UPPCL.
- 8.1.9 If the action of the Power Stations, on intimation of error in the bill, is disputed by the UPPCL, a reference shall be made, as provided under clause 12.1. In case the dispute is not resolved and if any payment remains in dispute on the due date for payment thereof, UPPCL shall make the payment in full (and shall not withhold payment of the disputed amount). The existence of the dispute as to an invoice shall not relieve UPPCL of compliance with any other provisions of this Agreement.
- 8.1.10 If the parties are fail to resolve the settlement of the dispute by mutual discussions among the parties concerned as per Clause 12.1, a reference shall be made to Arbitration as provided in the Clause 12.2 herein below. If it is decided by the Arbitrator that the amount paid by UPPCL was found to be in

excess/shortfall, NPCIL shall refund the amounts to the extent found not admissible/ shall receive the balance payable to NPCIL, together with such interest as may be determined by the Arbitrator, subject to this interest rate not exceeding 15% per annum.

8.2. ESTABLISHMENT OF LETTER OF CREDIT (LC) AND PAYMENT OF BILLS

8.2.1 The payment of all bills shall be made by the UPPCL through an irrevocable revolving LC, opened in favour of NPCIL & maintain by UPPCL at a branch of the State Bank of India or any Nationalized Bank, as may be mutually agreed. The LC shall be established prior to the commencement of power supply from the Power Stations. The LC shall be established for an amount equal to 105% of the average of monthly energy bills of the immediately preceding six months excluding the periods of planned shut down. The Power Station will inform to the UPPCL the amount of LC, which is required to be opened as per above guidelines.

8.2.2. The LC shall be valid for a minimum period of one year at all times, without any limitation or restriction with regard to the manner and dates when bill(s) can be presented to the Bank by NPCIL. UPPCL shall ensure that LC as above remains valid at all times during the entire/extended validity of this agreement. The bills so presented by NPCIL to the bank shall be promptly paid on their presentation. All the LC charges shall be borne by the UPPCL.

8.2.3. UPPCL assures that it shall regularly recoup and periodically renew/enhance LC to ensure full payment of NPCIL bills and that there will be no default in LC payment to NPCIL in respect of supply of power from all its power-stations.

8.3 REBATE ON PAYMENT THROUGH LC

8.3.1 NPCIL shall allow a rebate of 2.5% (two and a half percent) only (excluding duties, levies, etc.) on the amount of the bill negotiated through the LC on presentation of the bills by NPCIL to Bank within the last day of the calendar month in which date of issue of the bill is recorded as per Clause 8.1.1. NPCIL shall not allow any rebate, where the payments are made subsequently through LC or otherwise, in the following month to the month in which the date of issue of the bills is recorded, as mentioned under Clause 8.1.1. The rebate shall be limited to the amount of NPC bills after excluding wheeling charges (if any), taxes, duties, cess, etc, billed therein. NPCIL shall not allow any rebate for payments made without LC.

8.4 SURCHARGE DUE ON LATE PAYMENT

8.4.1 If LC is opened for any amount lower than calculated as above or though the LC is opened and the payment is not received, the bill amount not received would

be payable with an interest @ zero point zero four one percent (0.041%) per day (i.e. 15% per annum compounded quarterly) from the last day of the month following the month in which bill is raised by NPCIL. Also no rebate will be admissible on such amount.

8.5 NON-PAYMENT OF BILLS AND NON-ESTABLISHMENT OF LC

It is agreed that the UPPCL shall open the LC prior to the commencement of power supply & maintain the LC covering the monthly payment towards power supplied from the power stations of NPCIL as per the Tripartite Agreement signed by Government of India, Government of Uttar Pradesh & Reserve Bank of India. In the event of failure to establish/enhance LC within the specified period as detailed in Tripartite Agreement, NPCIL shall inform NREB to reduce supply of power from the power stations of NPCIL and enforce other provisions as given below.

- 8.5.1 In the event that LC of the required amount is not in place by the first day of the month in which the bill is raised, NPCIL shall advise REB/RLDC under intimation to UPPCL to reduce the entitlement from power stations of NPCIL to the extent of 2.5% of the average daily supply of the preceding 90 days to UPPCL. REB/RLDC shall correspondingly effect reduction in power supply by reducing the drawal schedule of the defaulting Bulk Power Customer.
- 8.5.2 In case payments are not made within 60 days from the date of billing, NPCIL shall advise NREB/NRLDC under intimation to UPPCL to reduce the entitlement from power stations of NPCIL by 5% (inclusive of reduction in supply of electricity as provided in preceding para) of the average daily supply of the preceding 90 days to the defaulting Bulk Power Customer. In case payments are not made within 75 and 90 days of the billing, reduction in entitlement shall be further increased to 10% and 15% respectively. NREB/NRLDC shall correspondingly reduce the drawal schedule of the defaulting Bulk Power Customer.
- 8.5.3. In the event that payment default by the UPPCL continues after 90 days from the date of billing, NPCIL shall approach the Ministry of Finance, Government of India under the provisions of the Tripartite Agreement, and the Ministry of Finance shall pay the same to NPCIL on behalf of the UPPCL, and recover such amounts through adjustment against releases to the State Government on account of Plan assistance, State's share of central taxes and any other grant or loan.
- 8.5.4 Notwithstanding the above, if any bill(s) still remain unpaid NPCIL shall have the authority to discontinue/reduce entitlement of power of UPPCL from the power stations of NPCIL to UPPCL and inform NREB accordingly.

9.0 PERIOD OF AGREEMENT

The Agreement shall come into effect from the date of signing of the Agreement and shall continue to remain in force for **a period of 15 years thereafter**. In case UPPCL continues to get power from the Power Stations after expiry of this agreement without further renewal or formal extension thereof, all the provisions of this Agreement shall continue to operate and applicable in its letter and spirit, till this Agreement is formally renewed, extended or replaced.

10.0 SUCCESSORS AND ASSIGNS

In case any of the Bulk Power Customer is wound up and/or its generation, transmission and distribution activities are taken over by other organization(s)/agency (ies), partly or wholly, the Agreement shall be binding mutates upon the successor organization(s)/agency (ies), and guarantee by the concerned State Government, shall continue to remain valid with respect to the obligations of the successor organization(s)/agency (ies). In such an event, the Tripartite Agreement arrangement referred to in para 8.5 and LC arrangement referred to in para 8.2 above shall also be binding in respect of the successor organization(s)/agency (ies) with such modifications and changes as may be considered necessary.

11.0 FORCE MAJEURE

The parties shall ensure compliance of the terms of this Agreement. However, no party shall be liable for any claims for any loss, damage or compensation whatsoever arising out of failure to carry out the terms of this agreement, to the extent that such failure is due to force majeure events such as war, rebellion, mutiny, civil commotion, riot, strike, lockout, fire, explosion, tempest, flood, lightning, earthquake or other forces, accident or any cause beyond the reasonable control of any party, or act of God or due to any restraint or regulation of the State or Central Government. But any party claiming the benefit of this clause shall satisfy the other party of the existence of such an event and give written notice within 30 days to the other party to this effect. Generation/drawal of power shall be started as soon as practicable by the parties concerned after such eventuality has come to an end or ceased to exist.

12.0 ARBITRATION

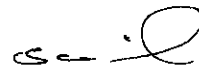
12.1 The parties hereto agree to attempt to resolve all disputes arising hereunder promptly, equitably and by entering into good faith discussions to resolve the disputes at a chief engineer level. In the event the respective representatives of the Parties are unable to reach an amicable settlement of the disputes, the said disputes shall be referred to internal committee comprising of two senior level representatives from each party. The Parties further agree to provide each other

copies of any and all non-privileged records, information and data pertaining to any such dispute.

- 12.2 If the Parties are unable to resolve any dispute in accordance with Clause 12.1 above, within 30 days, all such disputes shall be settled exclusively and finally by arbitration following the procedure laid down herein and the rules provided in the Arbitration and Conciliation Act, 1996. Accordingly, on specific written request of the aggrieved party all the disputes shall be referred to a sole arbitrator/arbitrators to be appointed as per the terms of Arbitration and conciliation Act, 1996, as amended from time to time.
- 12.3 In an arbitration invoked at the instance of either Party to this Agreement, the arbitrator shall be free to consider the counter claim(s) of the other party even through they are not mentioned in the reference to arbitration.
- 12.4 The place of the arbitration shall be Mumbai, India.
- 12.5 Notwithstanding the existence of any disputes and differences referred to in the arbitration, the parties hereto shall continue to perform their respective obligations under this Agreement and the payment of any bill referred shall not be withheld by the UPPCL for any reason whatsoever including the pendency of arbitration proceedings.

13 NOTICE

All notices required or referred to under this agreement shall be in writing and be signed by the authorities mentioned below. Each such notice shall be deemed to have been duly given upon receipt by the party involved, if delivered or sent by registered mail/speed post with postage prepaid and with an acknowledgement of receipt from the other party as follows:



To or by the NPCIL:

Managing Director,
Nuclear Power Corporation of India Ltd.,
Nabhikiya Urja Bhavan, Anushaktinagar,
Mumbai 400 094. Fax No: 022-25557278

To or by the Power Stations:

Station Director,
Narora Atomic Power Station,
Dist. Bulandshahar,
Uttar Pradesh 202 389
Fax No.:05734-222189/222187

Station Director,
Rajasthan Atomic Power Station,
P.O.Anushakti, Via Kota,
Rajasthan 323303.
Fax No:01475-242274/242190
01475-242045/242035

To or by the Bulk Power Beneficiaries:

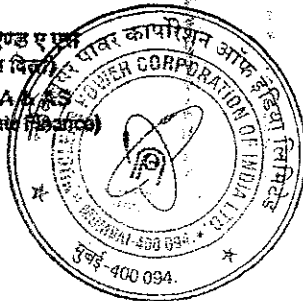
The Director(Commercial),
UTTAR PRADESH POWER CORPORATION LIMITED,
Shakti Bhawan, 14,Ashok Marg,
LUCKNOW-226 001.
Fax No: 0522-2287789

In witness whereof the parties have executed these presents through their authorized representatives at Mumbai, on the day, month and the year first above written.

WITNESS

1. A.S. Lakshmi

ए. एस. लक्ष्मी, आई ए एण्ड ए फू
अधिकासी निदेशक (निगम वित्त)
A. S. LAKSHMI, I.A. & F.
Executive Director (Corporate Finance)



2.

S. K. Jain

For and on behalf of
Nuclear Power Corporation of India Ltd.

श्रीवास कुमार जैन / S. K. JAIN
अध्यक्ष एवं प्रबंध निदेशक / Chairman & Managing Director
एन.पी.सी.आई.एल. / Nuclear Power Corporation of India Ltd.
(भारत सरकार का उद्यम) / Govt. of India Enterprise
वी. एस. भवन, अनुशक्ति नगर, मुंबई-400 094.
V. S. Bhavan, Anushaktinagar, Mumbai-400 094.

ER. C. S. Sharma

For and on behalf of
UTTAR PRADESH POWER CORPORATION LIMITED

निदेशक (वाणिज्य)
उ.प्र. पावर कारपोरेशन लि.
शक्ति भवन, 14-अशोक मार्ग,
लखनऊ

1. ER. C. S. SHARMA
CHIEF GENERAL MANAGER
PROJECT MANAGEMENT UNIT (W. B.)
U. P. POWER CORPORATION LTD.
SHAKTI BHAWAN EXTN.,
LUCKNOW.

MEMORANDUM OF INSTRUCTIONS FOR THE ASSESSMENT OF ENERGY SOLD TO THE BULK POWER BENEFICIARIES

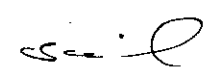
- A.1 This memorandum lays down the legal procedure as being followed for the assessment and billing of electrical energy supplied from the Power Stations to the UPPCL/ Bulk Power Beneficiaries using UPPCL (NAPS 1&2), RVPN (RAPS1&2) and Power Grid transmission system and vice-versa.
- A.2 For evacuation of power from the Power Stations, the following 220 kV lines has been laid by UPPCL (NAPS 1&2) / PGCIL (RAPS3&4) from the Power Station –

| UPPCL lines for NAPS 1&2 | |
|--------------------------------------|---------|
| NAPS to Moradabad, | 1 line |
| NAPS to Shimboli, | 1 line |
| NAPS two to Khurja, | 2 lines |
| NAPS to Harduaganj 220kV substations | 1 line |

| PGCIL lines for RAPS 3&4 | |
|-------------------------------------|------------|
| RAPS to Anta | 1 line |
| RAPS to Kota | 1 line |
| RAPS 3&4 – RAPS 1&2 | 1 tie line |
| RAPS to Chitorgarh | 2 lines |
| RAPS to Nimbahera | 1 line |

Apart from supplying power to Northern Grid, the Power Stations will be using a portion of the power generated for their internal consumption of any other departmental facility. The schematic layout of 220 kV switchyard showing billing and metering arrangement is attached as Appendix-I.

- A.3 UPPCL/Bulk Power Beneficiaries shall enter into suitable arrangement with PGCIL, other Bulk Power Beneficiaries or Agencies as being followed for wheeling the energy generated by the Power Stations including the charges and the energy losses for such wheeling. The payments of NPCIL bills in any case shall not be affected and no deductions from NPCIL bills would be permissible on this account.
- A.4 As the 220 KV lines from the Power Stations are connected to UPPCL/NR transmission system, apart from evacuating the power from the Power Stations, there will also be power flow from and to the UPPCL grid/NR grid through these lines. When Power Stations is totally shut down, the power requirement of the



Power Station and their facilities belonging to the department will be obtained from NR grid through these lines.

- A.5 The Power Stations shall prepare bills for the net energy supplies to the UPPCL/Bulk Power Beneficiaries on the basis of "Regional Energy Accounts" prepared by NREB under the agreement, from meter reading recording as described below.
- A.6 For assessing and billing the energy supplies by the Power Stations to the UPPCL/Bulk Power Beneficiaries and vice versa, the following metering arrangements are made. However, the metering scheme as per the agreed practice in vogue shall be approved by PGCIL/NREB so as to avoid any difficulty in preparing Regional Energy Account.

i) Main and Check -I System

Two sets of metering by main and check-I (duplicate sets) are provided to ensure that metering arrangement is reliable.

NAPS: Summation C.T.s are provided on the output side of Generator Transformer GT1 and GT2 220 kV side for energy export. Similarly, summation CTs are provided on 220 kV side of station auxiliary transformers SUT1 and SUT2 for recording the energy import.

Two main meters designated Export Main and Import Main and two export check-I and Import Check-I are connected to these summation CTs and bus PTs. While export main/check-I will record the energy exported from the Power Station, import/check-I will record the energy imported by the Power Station.

RAPS: Two sets of Energy meters are provided on 220 KV side of Generator Transformer and start-up transformer of each unit. For this purpose CTs are provided on 220 KV side and PT supply is taken from Electromagnetic Voltage Transformer connected to 220 KV buses.

Energy meters connected to Generator transformer side will record the energy exported to grid whereas those connected to Start-Up-Transformer side will record the energy imported from the Northern Regional Grid. Energy meters generate impulses proportional to their energy and feed to Telecounting instrument (FAF) for calculating net export, net import (active and reactive), maximum demand etc. Net export and import energy along with maximum demand is recorded periodically on the printer automatically.

ii) Check-II System

NAPS: This system of check metering is based on power flow through transmission lines. A set of summation CTs are provided to the output of all the five lines emanating from station to UPPCL grid.

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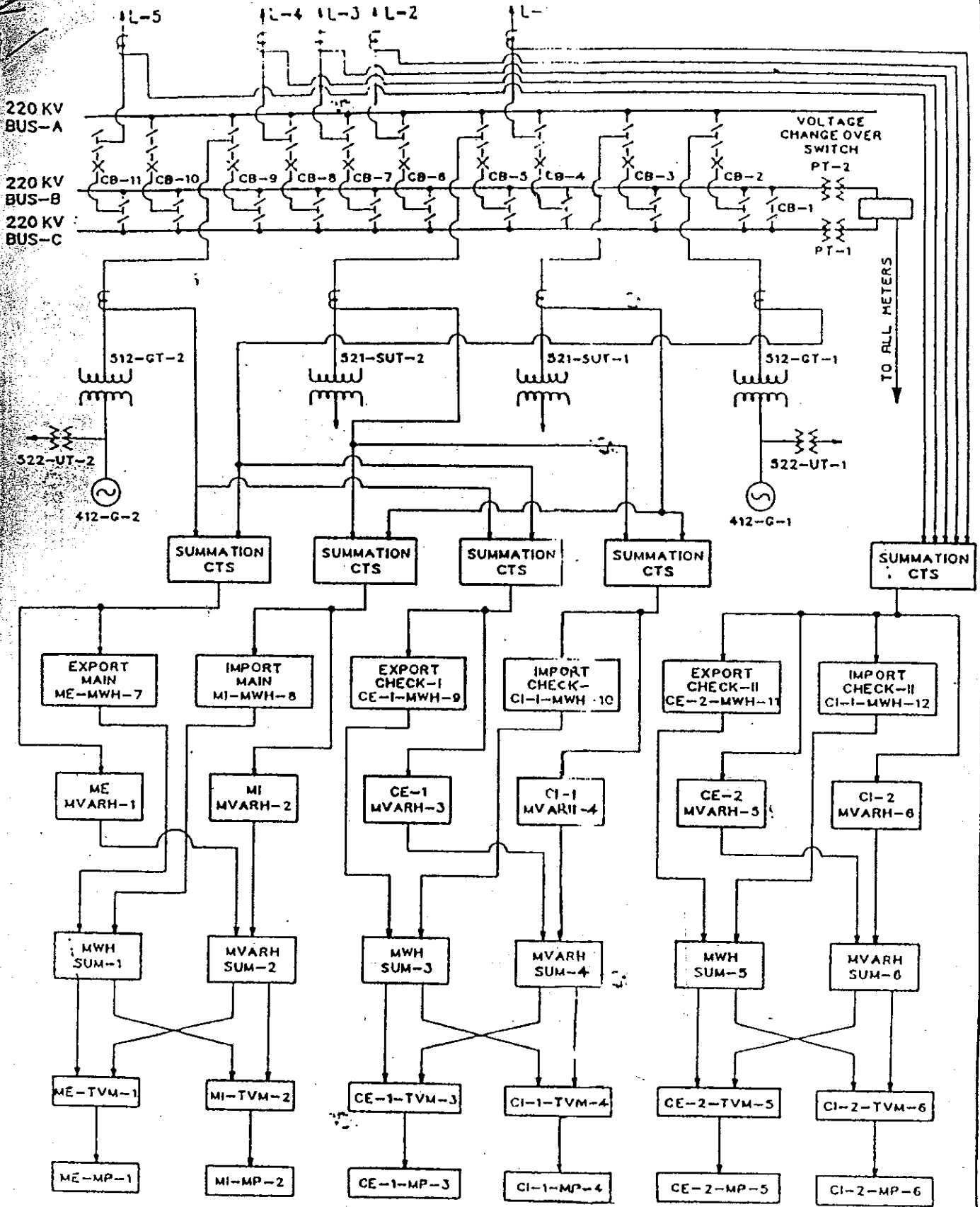
Two meters designated as Export Check-II and Import Check-II are connected to these CTs. However, same bus PT is used. While Export Check-II gives the energy from the station, Import Check-II gives the energy import to station.

- A.7 For billing purposes, the net energy supplies from the Power Stations will be arrived at by subtracting the energy recorded in Import (main) from Export (main). In case the imported by the Power Stations is more than the net energy supplied to the Power Station, it will be arrived at by subtracting the energy recorded by Export (main) from energy recorded in Import (main). The meters Import (main), Export (main) and others are provided with reverse stop arrangement to prevent recording of energy when the meters run in reverse direction.
- A.8 In case of the Export and Import Main meters failure, the net energy calculation can be made from the readings of check meters (**NAPS**: check-I meters.)
- A.9 NPCIL will generate power and the energy output from the Power Stations shall be fed to UPPCL lines/ Northern Regional Grid and NREB shall monitor and co-ordinate the consumption/drawal by the UPPCL/ Bulk Power Beneficiaries as being followed as per agreed guidelines. The UPPCL/ Bulk Power Beneficiaries shall so regulate their power system parameters and take necessary corrective action to maintain the power system parameters so as to enable the UPPCL/ Bulk Power Beneficiaries the agreed/entitled share as per the allocation issued by Ministry of Power / GOI from time to time.
- A.10 For the purpose of monitoring, control and accounting of power/energy on global basis by NREB, the UPPCL/Bulk Power Beneficiaries shall provide adequate space and facilities at suitable terminal point of the inter-state tie lines for metering and install meters in the form of main meters and check meters as per the procedure followed in concurrence with NREB.
- A.11 As and when additional inter-state tie lines are commissioned, necessary meters shall be installed by the parties concerned in consultation with NREB.
- A.12 All the main and check meters (special energy meter provided by PGCIL as agreed in the NREB recommendation) or of accuracy clause 0.2% over full power factor range as per relevant IS. They shall be jointly inspected and sealed on behalf of the parties concerned and shall not be interfered with by either party except in the presence of the other party or its accredited representatives.
- A.13 The monthly meter reading, both main and check (check -1 For NAPS) meters shall be taken jointly by the parties concerned on the last day of the calendar month at 24.00 hrs. as per the practice in vogue. The readings shall be telexed to NREB immediately and a copy sent by post. A signed copy of such readings will also be brought by the representative of each party and made available to

NREB. Energy accounting by NREB and billing shall be computed based on the main meter readings as provided under the various provisions of this agreement.

- A.14 The consumption registered by the main meter alone will hold good for the purpose of energy accounting by NREB and billing provided that if the readings of the main meter differ from reading of corresponding check meters by more than $\pm 1\%$ (one percent) the main and check meters shall be tested and calibrated. If, on such testing, the main meter exceeds $\pm 0.5\%$ (one half percent), the energy figure recorded by the main meter shall be revised accordingly pending results of such testing shall continue to be based on the energy recorded by the main meters.
- A.15 If, at any time, any party feels that a main meter is not reading correctly, it shall give notice to the concerned party (however, energy calculation can be made by using check meters (NAPS: check-I meters)) which shall undertake testing and calibration in coordination with the parties concerned and NREB. If error on such testing is found to be exceeding $\pm 0.5\%$ necessary adjustments in the bills shall be made from the date of notice or from such other date as can be satisfactorily established to be proper for such adjustment.
- A.16 If a main meter stops recording, it shall be immediately rectified or replaced by a correct meter. In the intervening period, energy shall be read from the corresponding check meter. However, the accuracy of the check meter will be re-established as soon as the main meter will be rectified or replaced by a correct meter.
If the check meter is not found to be within permissible limits of error, the error at the load and power factor nearest the average load served during the period shall be taken as the error factor to be applied for the correction. If there is no check meter or if a check meter has also stopped, then the energy shall be assessed on any other basis between the parties concerned. In case of dispute, the decision of NREB as per the practice being followed shall be final and binding.
- A.17 The main and check metering devices (which terms shall include all equipment associated with metering, like meters, CTs, PTs, etc.) shall be tested/calibrated by the respective parties in whose jurisdiction the meters are located, irrespective of calibration that might have been done at intervals not exceeding six months. The testing/calibration shall be carried out jointly with the party connected at the other end and NREB. The meters shall be tested/calibrated using RSS calibrated meter at 100, 50, 20 and 10% load at unity and 0.5 P.F. The meters shall be deemed to be working satisfactorily if the errors are within the permissible limits allowed in the relevant IS/BS specification applicable to high precision energy meters.

:END:



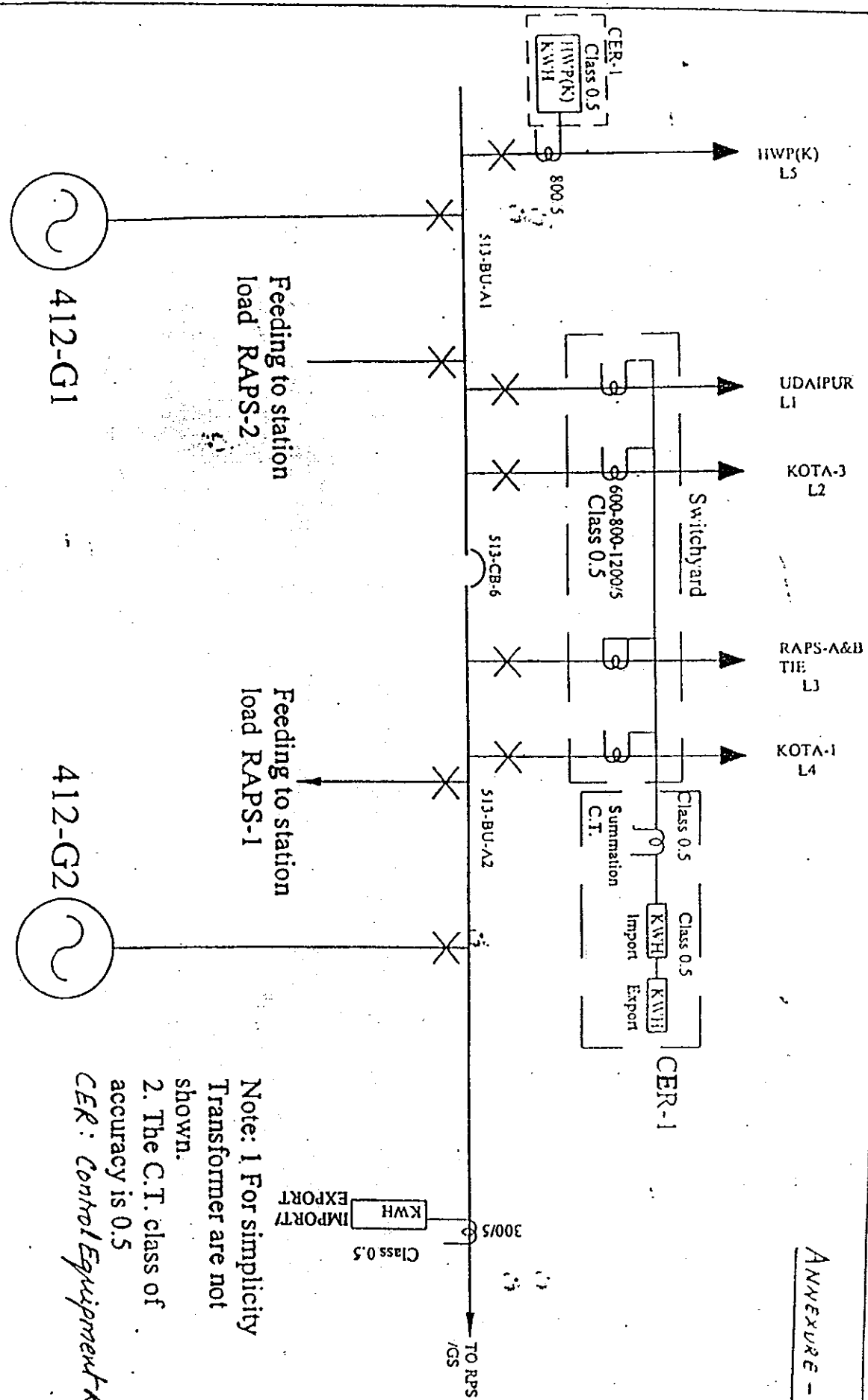
NOTES :-

- MWH - L & G MAKE 0.5 % ACCURACY CLASS.
- MVARH - L & G MAKE 0.5 % ACCURACY CLASS.
- GT CT - 800/1A, 0.2 % ACCURACY CLASS.
- SUT CT - 150-100/1A, 30VA, CL-0.5.
- PT-1 & 2 - $\frac{220,000}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$, 0.5, 500VA.

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NAPP

EXPORT/IMPORT ENERGY BILLING AT NAPP



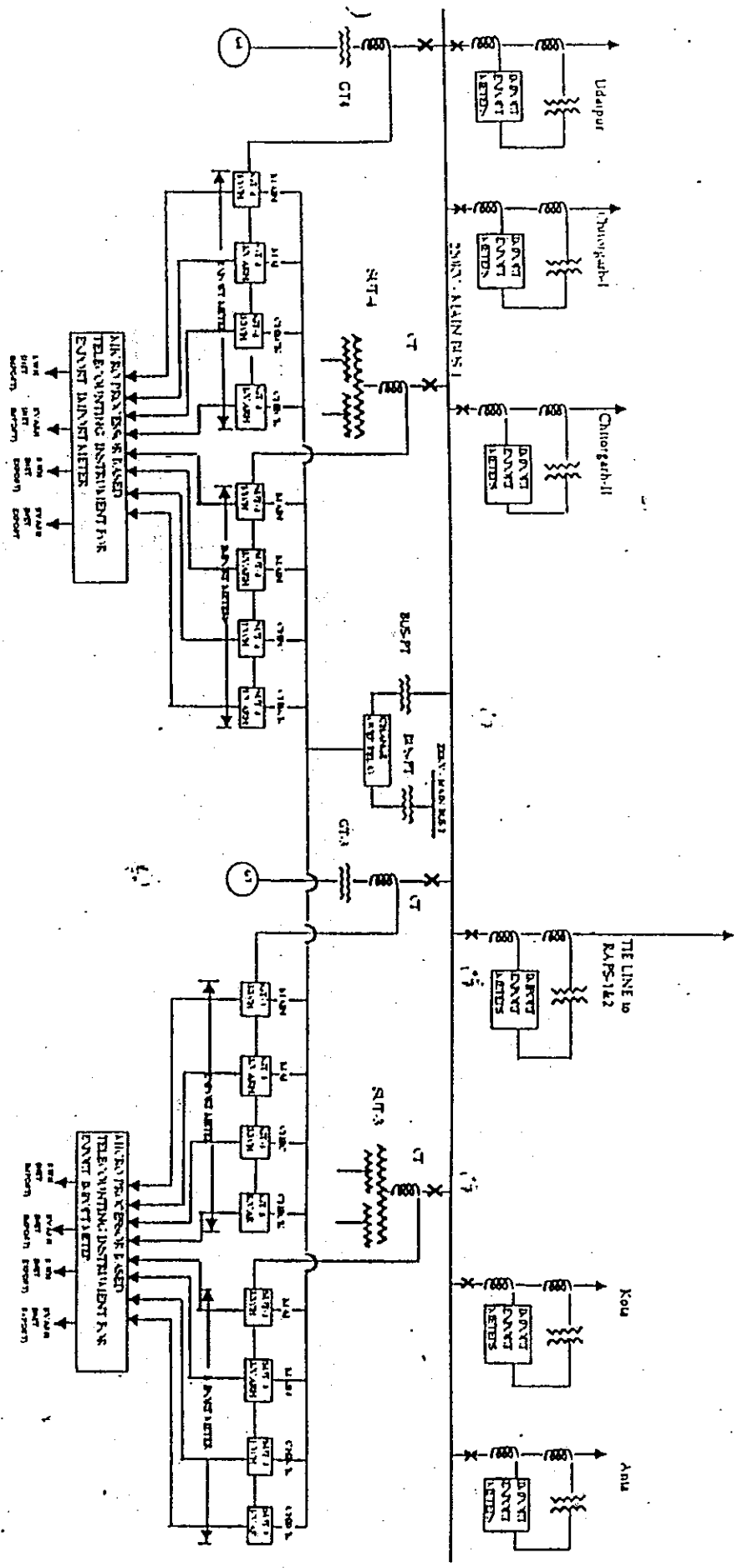
EXISTING SCHEMATIC ARRANGEMENT OF NET
 IMPORT /EXPORT ENERGY METERING

Note: 1 For simplicity
 Transformer are not
 shown.
 2. The C.T. class of
 accuracy is 0.5
 CER: Control Equipment Room

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BILLING SCHEMATIC SHOWING EXPORT / IMPORT OF ENERGY FOR RAPS-3&4

ANNEXURE - III



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EXHIBIT - 1