



ULDC project.

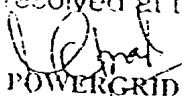
- 4.4 Detailed modalities and basis for the recovery of cost/charges in respect of equipments/system procured and installed in Regional Load Despatch Centre of POWERGRID and their subsequent operation & maintenance under this MOU shall be recovered from the Beneficiaries (other than "Central Generating Companies") based on any sharing mechanism agreed by all Beneficiaries (other than "Central Generating Companies").
- 4.5 MSEB shall open irrevocable & revolving Letters of Credit as per commercial agreement to be signed between POWERGRID and MSEB for payment of charges for Load Despatch and Communication facilities provided by POWERGRID.
- 4.6 The escalations on O&M and other terms and conditions like surcharge on delayed payments, rebates admissible on LCs and other commercial terms and conditions shall be detailed in the commercial contract.

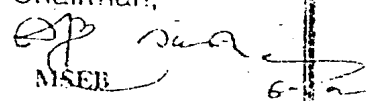
#### 5.0 GENERAL

After implementation of Unified Scheme, provision of LD&C equipments in new projects, IPPs coming under Beneficiaries, Central Generating Companies are to be taken care by respective Beneficiaries, Central Generating Companies & POWERGRID for their jurisdiction. Provision of LD&C equipment are to be ensured at the time of feasibility stage of the project for which necessary guidelines shall be followed as per letter dated 22.12.94 issued by CEA to all constituents.

#### 6.0 ARBITRATION

In the event of dispute/difference of opinion on any matter or terms and conditions contained in the MOU, such issues shall be mutually discussed and resolved at the REB forum, failing which the same shall be referred to Chairman,

  
POWERGRID

  
MSEB



CEA or his nominee not below the rank of Member, CEA for Arbitration. The Arbitrator shall make a reasoned Award, which shall be final and binding upon the Parties. The cost of the Arbitration shall be shared equally between the parties. The Arbitration proceedings shall be in accordance with the Indian Arbitration and Conciliation Act, 1996. The venue of Arbitration shall be New Delhi.

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

For and on behalf of  
Maharashtra state Electricity Board

*(Handwritten signature)*  
9/6/2002

(V. K. PRASHER)  
EXECUTIVE DIRECTOR (LD&C)  
POWERGRID, NEW DELHI.

*(Handwritten signature)*

(D. R. DANDGE)  
TECH. DIRECTOR (EHVP - COM.)  
MSEB, MUMBAI.

IN PRESENCE OF

*(Handwritten signature)*

(R.N. NAYAK)  
GENERAL MANAGER (LD&C)  
POWERGRID, NEW DELHI

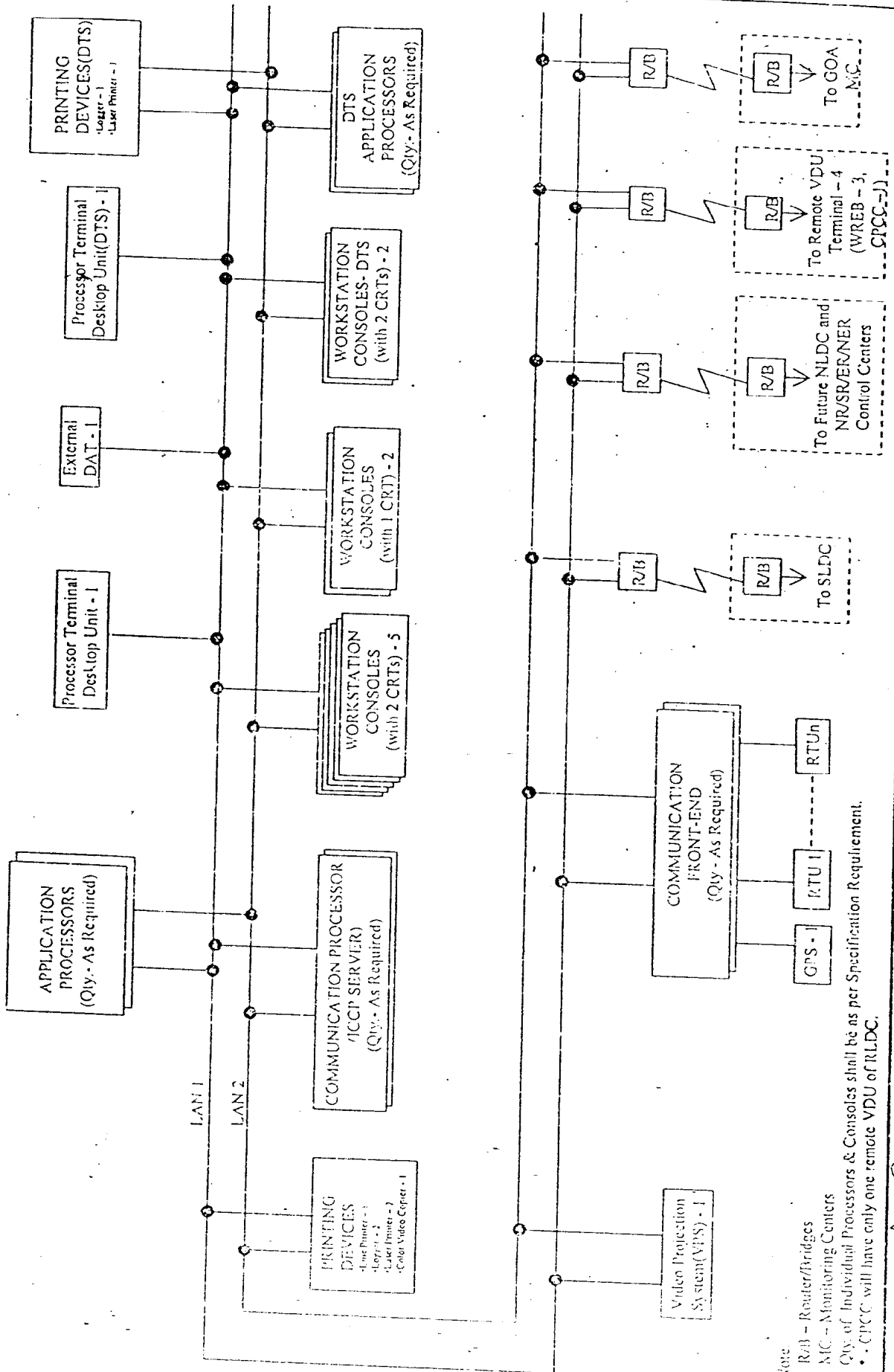
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(J.V. NADKARNI)  
CHIEF ENGINEER (TR.PL.)  
MSEB, MUMBAI

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POWERGRID

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MSEB

# RLDC BROAD CONFIGURATION

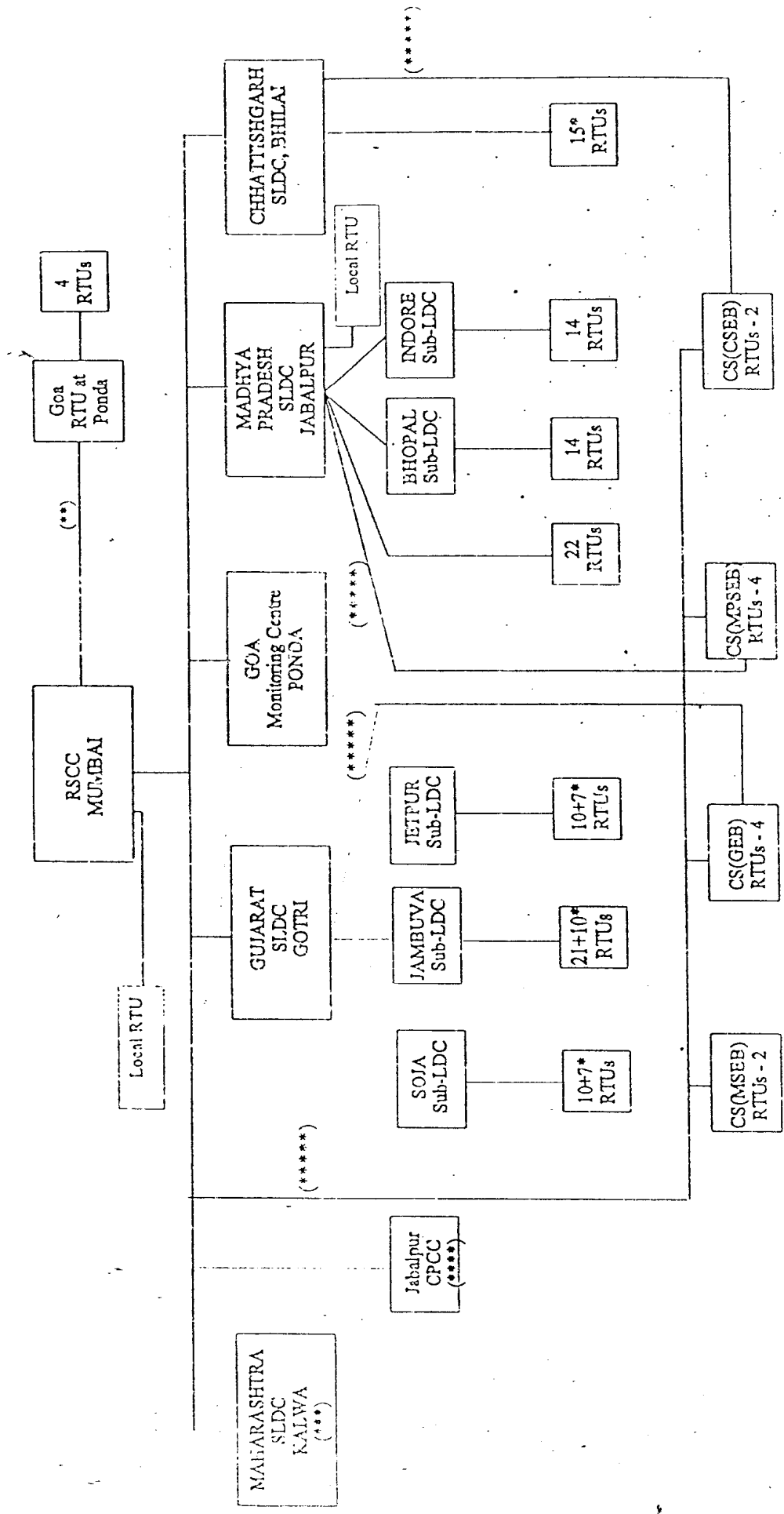


- Note
1. R/B - Router/Bridges
  2. M.C. - Monitoring Centers
  3. Qty. of Individual Processors & Consoles shall be as per Specification Requirement.
  4. CPCC will have only one remote VDU of RLDC.

*[Handwritten Signature]*

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WESTERN REGION HIERARCHICAL LOAD DESPATCH CENTRE ORGANISATION



\* RTUs shown are existing and are not part of this Project. These RTUs shall be integrated.  
 \*\* RTU at Ponda(Goa) is working as Data Concentrator, collecting data from 4 other RTUs of Goa and further transmitting it to FEP at RSCC.  
 \*\*\* Being Implemented by MSEB on their own.  
 \*\*\*\* CPCC will have only one remote VDU of RLDC.  
 \*\*\*\*\* Second redundant port of RTU shall be utilized to communicate respective SLDC/Sub-LDC in which the Central Sector RTU is located.



संदर्भ संख्या/Ref. Number

केन्द्रीय कार्यालय/CORPORATE CENTRE

Ref. C/LDC/WR/Gc

5<sup>th</sup> March 2001

To

The Chief Electrical Engineer  
Government of Goa  
Vidyut Bhavan  
3<sup>rd</sup> Floor  
PANAJI - GOA

*Subject : MOU for Unified Load Despatch & Communication Scheme of  
Western Region*

Dear Sir,

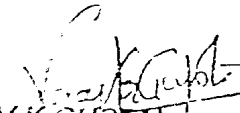
We convey our sincere thanks for your visit to our office on 2<sup>nd</sup> March 2001 regarding signing of MOU. We are returning herewith one copy of MOU duly signed by our Director (Operations).

We are in the process of finalisation of technical specification of EMS SCADA Package including RTUs and a copy of the same shall be forwarded to you shortly.

We look forward to your continued cooperation & support in implementation of the scheme.

Thanking you,

Yours faithfully,

  
(V.K. GUPTA)  
DGM (LD&C)

Encl.a/a

The 'POWERGRID', "Beneficiaries", "Generating Companies" and "WREB" have agreed as under :-

**1.0 ESTABLISHMENT/AUGMENTATION OF LOAD DESPATCH CENTRES WITH ASSOCIATED COMMUNICATION FACILITIES**

**1.1 BROAD SCOPE OF WORK AND RESPONSIBILITIES**

POWERGRID will be responsible for the overall planning, design and engineering, procurement of Load Despatch and Communication equipment/ systems, overall co-ordination and supervision of erection, testing and commissioning of Load Despatch and Communication facilities as Unified Scheme. POWERGRID will also be responsible for modernisation/augmentation of facilities at RLDC for the proposed Unified Scheme as well as establishment / modernisation of State Load Despatch Centres.

The Constituents will be responsible for providing infrastructure and certain other facilities such as land, building, civil works, staff quarters, air-conditioning, power supply, establishments etc. for the establishment/augmentation of Load Despatch and Communication facilities at their level.

**1.2 PROJECT CO-ORDINATION COMMITTEE**

A Project Co-ordination Committee (PCC) consisting of members from the various Beneficiaries, Generating companies, CEA, WREB and POWERGRID shall be set up which shall be responsible for overall co-ordination and monitoring the progress of Implementation of the Unified Scheme. The PCC shall meet periodically to review the progress of implementation of the Unified Scheme and suggest measures for timely completion of total projects in well co-ordinated manner. This Committee shall comprise of the concerned Chief Engineers of Beneficiaries, a Chief Engineer from CEA, Member Secretary, WREB, representatives at senior level from the Generating Companies and Director (Operations), Executive Director/General Manager of Load Despatch and Communication at Corporate level, Regional General Manager/Addl.

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*Abu Dindar*

pertaining to establishment of Load Despatch Centres at State/ Beneficiary level.

1.4.3 Assist in obtaining the frequency & SACFA clearance for Microwave systems.

1.4.4 Arranging storage space for equipments procured by POWERGRID for SLDCs, Sub-LDCs, various generating stations and sub-stations in their state.

1.4.5 Provide facility for receipt and proper storage of equipment pertaining to their system.

1.4.6 Assist in physical survey, verification and inspection of equipment on receipt and reporting damages, shortages etc. to Insurance Company and POWERGRID.

1.4.7 Association with the supervision of installation, testing and commissioning of all the equipments at SLDCs/Sub-LDCs, Generating stations and Sub-stations.

1.4.8 Submission of monthly project progress reports to PCC.

1.4.9 Providing free access to POWERGRID/Suppliers' staff involved in implementation of Unified Scheme to Load Despatch Centres, all substations/generating stations and other connected places required to be visited during project implementation.

1.4.10 Arranging necessary shut down etc. for transmission lines, sub-stations, generating units, whenever required for erection, testing and commissioning of equipment/system.

1.4.11 Arranging press and gazette notifications as per Indian Electricity (Supply) Act, 1948 and Indian Telegraph Act, 1885.

1.4.12 Timely placement of staff as per PCC recommendation and recommend names of Engineers from the respective beneficiaries to POWERGRID for arranging training.

1.4.13 Participation in FAT/SAT on SLDC and Sub LDC Systems.

1.4.14 Site preparation for monitoring of interface and RTU & communication equipment cabinets at generating stations/substations.

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*Aditya Kumar*

1.4.15 To interact with POWERGRID Project Incharge in case of non-compliance by the contractor to implement the scheme as per contract and approved drawings.

## 1.5 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF GENERATING COMPANIES

1.5.1 Timely furnishing of required information/data to POWERGRID for enabling expeditious preparation of Detailed Project Report and technical specification for the Unified Scheme.

1.5.2 Providing space for installation of RTUs and interface Cabinet housing transducers and interposing relays etc. in their premises, access to CT/PT circuits & contacts for wiring of the interface cabinet and access to auxiliary power terminals to meet the power requirements of RTUs and transducers and access to PLC equipments for data transmission.

1.5.3 Receipt and proper storage of equipment pertaining to their system despatched by POWERGRID.

1.5.4 Physical survey, verification and inspection of equipment on receipt and reporting damages, shortages etc. to Insurance Company and POWERGRID.

1.5.5 Association with the supervision of Installation, testing and commissioning of all the equipments at their generating stations.

1.5.6 Necessary shut downs required for erection, testing & commissioning of the equipment/systems will be arranged as per mutually agreed programme.

1.5.7 Submission of monthly project progress reports for the works being carried in their area to PCC.

1.5.8 Providing free access to POWERGRID/Contractor's staff involved in implementation of Unified Scheme to Load Despatch Centres, all substations/generating stations and other connected places required to be visited during project implementation.

## 2.0 OPERATION AND MAINTENANCE OF LOAD DESPATCH & COMMUNICATION FACILITIES

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*Shri Shukla*



## **2.1 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF POWERGRID**

- i) Operation and maintenance of Regional System Co-ordination Centre and Central Sector telecommunications system.
- ii) To provide minimum number of spares to the States as incorporated in the respective technical specifications to meet their day-to-day requirement of routine maintenance.
- iii) Provide technical expertise and support for maintenance of POWERGRID supplied equipments /system to Beneficiaries to help the Beneficiaries in maintaining high availability and satisfactory operation of the equipment/system as and when required by Beneficiaries on the chargeable basis.
- iv) Operate RSCC under the overall guidance of WREB.

## **2.2 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF BENEFICIARIES (Other than Generating Companies)**

- (i) Operation and maintenance of Load Despatch and Communication systems supplied by POWERGRID in their respective jurisdiction to ensure their high availability and satisfactory operation at all times.
- (ii) Routine maintenance of POWERGRID supplied equipments/systems to Beneficiaries shall be taken care by the respective SEBs/Beneficiaries including procurement of spares. Special and major maintenance works of such equipment/system will be the responsibility of POWERGRID as and when required to arrange equipments/services from outside agencies on chargeable basis.

## **2.3 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF GENERATING COMPANIES**

- 2.3.1 The generating companies will extend full help and co-operation to POWERGRID & respective SEB for maintenance of the equipments (whenever required) installed in their premises under the Unified Scheme.

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*Sheela*

### 3.0 FUNDING OF SCHEME

3.1 The funding of total cost of the Unified scheme of Load Despatch and Communication facilities shall be as under :-

3.1.1 POWERGRID will arrange funds required for Consultancy, total design and engineering of the Unified Scheme, procurement of Load Despatch and Communication equipment, UPS system alongwith batteries and chargers, erection, testing and commissioning of the Scheme by Suppliers. POWERGRID will also arrange funds for necessary infrastructural facilities such as renovation of building, civil works etc. required for modernisation / establishment/augmentation of Load Despatch and Communication facilities at Regional Load Despatch Centre and its subsequent operation and maintenance thereof.

3.1.2 Each Beneficiary shall arrange funds required for creation of infrastructural and other facilities such as land, building, civil works, staff quarters, air conditioning, power supply arrangement, establishment, office equipments and vehicles etc. However, as stated in clause 3.1.1 Load Despatch and Communication equipments will be supplied by POWERGRID for installation at the SLDCs, Sub-LDCs , sub-stations and generating stations as may be agreed between Beneficiaries and POWERGRID.

3.1.3 The ownership of the equipments supplied by POWERGRID to the Beneficiaries shall, however, vest with POWERGRID which will be transferred to the Beneficiaries after repayment of their costs.

3.1.4 In case of Generating Companies, the ownership of all equipments supplied by POWERGRID shall remain with POWERGRID.

### 4.0 RECOVERY OF CHARGES BY POWERGRID

4.1 The capital investment made by POWERGRID alongwith the actual interest paid by it towards implementation of the Unified Scheme of Load Despatch and

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*Alu. Shukla*

Communication facilities established through its funding shall be recovered during the life of the system from the Beneficiaries including operation and maintenance charges to the extent as decided by WREB/CERC on Load Despatch & Communication facilities established at the Regional Level through monthly charges from the date of commissioning.

- 4.2
- i) Detailed modalities and basis for recovery shall be mutually discussed and agreed upon and a separate commercial contract shall be signed between POWERGRID and various Beneficiaries for this purpose.
  - ii) Ownership of equipments/systems procured and installed at SLDC/Sub-LDCs, power stations and sub-stations together with associated communication facilities by POWERGRID shall be transferred to respective Beneficiaries at any point of time on payment of necessary charges to POWERGRID.

4.3 (I) The recovery of cost incurred by POWERGRID on providing Load Despatch & Communication Facilities in the Region under the Unified Scheme and Operation & Maintenance thereof subsequently shall be in form of a monthly tariff taking into account the following factors :-

*For Regional Load Despatch Centres*

- a) Interest on loan;
  - b) Amortisation or Depreciation at rates notified by Central Govt. from time to time;
  - c) Return on equity at rates as prescribed by the GOI from time to time;
  - d) Foreign exchange variation on foreign loans as actuals;
  - e) Interest on working capital;
  - f) Major repair/replacement;
  - g) Any Taxes /duties etc. as payable by POWERGRID;
  - h) Insurance cost;
- (II) The recovery of cost/charges in respect of equipments/system procured and installed in Regional Load Despatch Centre of POWERGRID and their subsequent operation & maintenance under this MOU shall be recovered from

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*[Signature]*

of feasibility stage of the project for which necessary guidelines shall be followed as per letter dated 22.12.94 issued by CEA to all constituents.

## 6.0 ARBITRATION

In the event of dispute/difference of opinion on any matter or terms and conditions contained in the MOU, such issues shall be mutually discussed and resolved at the REB forum, failing which the same shall be referred to Chairman, CEA or his nominee not below the rank of Member, CEA for Arbitration. The Arbitrator shall make a reasoned Award which shall be final and binding upon the Parties. The cost of the Arbitration shall be shared equally between the parties. The Arbitration proceedings shall be in accordance with the Indian Arbitration And Conciliation Act, 1996. The venue of Arbitration shall be New Delhi.

*Shri Shrinani*

For and on behalf of Power Grid Corporation of India Limited  
DIRECTOR (OPERATIONS)

*MLL*

02/31/2007

For and on behalf of Electricity Department, Government of Goa.  
Chief Electrical Engineer  
Electricity Department  
Panaji - Goa

MEMORANDUM OF UNDERSTANDING BETWEEN  
WESTERN REGIONAL ELECTRICITY BOARD (WREB), CONSTITUENTS AND  
POWERGRID CORPORATION OF INDIA LTD.(POWERGRID)

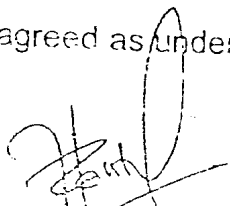
FOR THE ESTABLISHMENT OF

LOAD DESPATCH CENTRES WITH ASSOCIATED COMMUNICATION  
FACILITIES UNDER UNIFIED SCHEME IN THE WESTERN REGION

This Memorandum of Understanding signed between Power Grid Corporation of India Limited, a Government of India Enterprise and incorporated as a Company under the Companies Act 1956, on 23rd October 1989, having its registered office at B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110 016 (hereinafter referred to as "POWERGRID" which expression shall include its Administrators, Successors, Executors and Assign) and the Constituents of Western Regional Electricity Board comprising of State Electricity Boards of Madhya Pradesh, Chhatisgarh, Gujarat (including Union Territory of Dadra Nagar Haveli and Union Territory of Daman & Diu) and Maharashtra Electricity Deptt., Govt. of Goa, Nuclear Power Corporation, National Thermal Power Corporation Ltd., for establishment/augmentation of Load Despatch Centres with associated communication facilities in the Western Region under Unified Scheme and subsequent operation & maintenance of these facilities.

The State Electricity Boards of Madhya Pradesh, Chhatisgarh, Maharashtra and Gujarat (which includes Union Territory of Dadra Nagar Haveli and Union Territory of Daman & Diu), Electricity Department Govt. of Goa are, hereinafter, referred to as "Beneficiaries" and central Generating Companies comprising of National Thermal Power Corporation Ltd., Narmada Control Authority & Nuclear Power Corporation Ltd. hereinafter referred to as "Central Generating Companies" and Western Regional Electricity Board hereinafter referred to as "WREB".

The 'POWERGRID', "Beneficiaries", "Central Generating Companies" and "WREB" have agreed as under :-



Secretary  
Western Regional Electricity Board  
MUMBAI



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1.0 ESTABLISHMENT/AUGMENTATION OF LOAD DESPATCH CENTRES WITH ASSOCIATED COMMUNICATION FACILITIES

1.1 BRIEF DESCRIPTION OF THE SCHEME

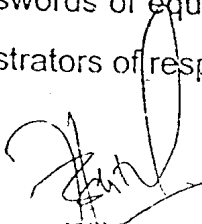
Western Region ULDC Project consists of RLDC (Regional Load Despatch Centre) located at Mumbai with 4 SLDCs at Jabalpur, Gotri, Bhilai & Kalwa in the State of Madhya Pradesh, Gujarat, Chhattisgarh & Maharashtra respectively. However, MSEB is implementing the SLDC on their own. Further, there are five Sub-LDCs in various states, one CPCC (for MIS purpose) and Monitoring Centre at Ponda in the state of Goa. The present scheme envisages total 120 RTUs to be procured under ULDC project in addition to the 25 RTUs of GEB to be integrated into the system to be supplied.

The B.O.Q. is based on the discussions held with the constituents, which may undergo minor changes during implementation phase of the project depending upon the system requirement. However, the changes of the beneficiary state shall be finalized after mutual discussions between POWERGRID and respective beneficiaries. The conceptual configuration diagram for RLDC (Regional Load Despatch Centre), SLDC, and Sub-LDC along with Regional Hierarchical diagram is enclosed at Annexure-I (in four pages).

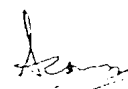
Critical RTUs of SEBs shall be provided with two separate paths (to the extent possible) to the nearest Control Center (either Sub LDC or SLDC) so as to provide redundancy.

The data pertaining to all Central Sector power stations and sub-stations shall be routed directly to RLDC as per CEA guidelines and shall be made available on real time basis continuously at SLDCs, as well. In addition, an independent communication port from Central Sector RTUs located in the state shall also be connected for routing the data directly to closest Control Center i.e. SLDC or Sub-LDC of respective state.

All passwords of equipment under ULDC Scheme will be handled by the system Administrators of respective beneficiaries at SLDC/Sub-LDC.



Secretary,  
Superior Electricity Board  
JABALPUR



Further, communication portion in GEB is being done by themselves, it should come in time to match with the schedule of ULDC scheme of POWERGRID. In order to optimize the Wideband communication cost under Central Sector, the cost of 6 fibres shall be apportioned to ULDC project for recovery of tariff from the Beneficiaries and the balance fibres shall not be booked to ULDC Project and shall be utilized by POWERGRID for other purpose. The apportionment of the cost of fibre optic cable for recovery from the beneficiaries under ULDC Project shall be as per GOI/CERC.

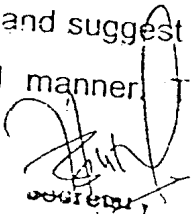
## 1.2 BROAD SCOPE OF WORK AND RESPONSIBILITIES

POWERGRID will be responsible for the overall planning, design and engineering, procurement of Load Despatch and Communication equipment/systems, overall co-ordination and supervision of erection, testing and commissioning of Load Despatch and Communication facilities as Unified Scheme. POWERGRID will also be responsible for modernisation/augmentation of facilities at RLDC for the proposed Unified Scheme as well as establishment/modernisation of State Load Despatch Centres.

The Constituents will be responsible for providing infrastructure and certain other facilities such as land, building, civil works, staff quarters for their employees, air-conditioning, power supply, establishments etc. for the establishment/augmentation of Load Despatch and Communication facilities at their level.

## 1.3 PROJECT CO-ORDINATION COMMITTEE

A Project Co-ordination Committee (PCC) consisting of members from the various Beneficiaries, Generating Companies, CEA, WREB and POWERGRID shall be set up which shall be responsible for overall co-ordination and monitoring the progress of Implementation of the Unified Scheme. The PCC shall meet periodically to review the progress of implementation of the Unified Scheme and suggest measures for timely completion of total projects in well co-ordinated manner. This Committee shall comprise of the concerned Chief

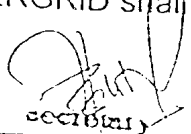
  
SECRETARY

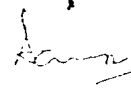
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Engineers of Beneficiaries, a Chief Engineer from CEA, Member Secretary, WREB, representatives at senior level from the Generating Companies and Director (Projects), Executive Director/General Manager of Load Despatch and Communication at Corporate level, Regional General Manager/Addl. General Manager and General Manager/Addl. General Manager incharge of WRLDC all from POWERGRID. The Director (Projects), POWERGRID shall be the Chairman of this Committee.

The PCC shall be responsible for :-

- 1.3.1 Furnishing relevant information/data to POWERGRID to enable formulation of system requirements/specification.
  - 1.3.2 Vetting and approval of detailed specifications for the scheme.
  - 1.3.3 Monitoring monthly progress of Scheme.
- 1.4 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF POWERGRID**
- 1.4.1 Engagement of Consultants as deemed necessary.
  - 1.4.2 Preparation of detailed Project Report for the Unified Scheme of the Western Region based on information/data to be furnished by the Constituents.
  - 1.4.3 Process the Detailed Project Report of the Unified Scheme for obtaining its sanction from Govt. of India.
  - 1.4.4 Preparation of Detailed technical specifications in co-ordination with PCC, general contract terms and conditions, bid documents, invitation of tenders, evaluation of bids, award of contracts for supply, erection, testing and commissioning of Load Despatch and Communication equipments, execution of contracts, settlement of contractual issues, insurance claims in respect of contracts placed by POWERGRID.
  - 1.4.5 Total design and engineering of the Unified Scheme in co-ordination with PCC as and when required.
  - 1.4.6 Renovation of existing building for Regional Load Despatch Centre, staff quarters, installation, testing, commissioning and other related works pertaining to establishment/augmentation of Regional Load Despatch Centre at Mumbai. POWERGRID shall also be responsible for installation, testing & commissioning

  
Secretary





of all the equipment/ system procured under ULDC scheme of WR by POWERGRID at State Load Despatch Centres, Sub-Load Despatch Centres, generating stations and sub-stations of the Beneficiaries with their co-ordination. Expenditure towards renovation of existing building for Regional Load Despatch Centre , staff quarters etc. shall be limited to Rs. 4.0 (Four) Crores only.

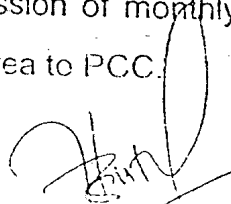
- 1.4.7 Arranging Customs clearance, receipt and despatch of equipments to Regional Load Despatch Centre, Central Generating Stations, State Load Despatch Centres and Sub-Load Despatch Centre, Generating Stations/Sub-Stations of various Beneficiaries.
- 1.4.8 Arranging training for Engineers of POWERGRID and Beneficiaries based upon the needs.
- 1.4.9 Factory and Site Acceptance Tests of equipments/system procured under ULDC scheme of WR by POWERGRID.
- 1.4.10 Project Management including overall co-ordination, planning, guidance and supervision for implementation of the Unified Scheme.
- 1.4.11 Copy of bidding documents & contract agreement shall be provided to all the beneficiaries by POWERGRID within 30 days from the date of release of bid documents to the bidders & signing of contract respectively.
- 1.4.12 For equipments to be installed by POWERGRID for use by WREB, site preparation and maintenance including spares shall be done by POWERGRID.
- 1.4.13 As the beneficiaries are the owner of the existing equipment in their SLDC, they shall provide the details available for integrating existing equipments under ULDC Scheme. In addition the details of the RTU protocols available with WRLDC shall also be obtained. Further, these documents shall be issued to all the prospective Bidders.
- 1.4.14 Any major change during the implementation phase resulting in financial implication to be intimated to PCC as and when arises.
- 1.4.15 Submission of monthly project progress reports to PCC.
- 1.4.16 Installation and commissioning of RTUs in POWERGRID owned substations and Central Sector power stations.

- 1.5 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF BENEFICIARIES  
(Other than Central Sector Generating Companies)**
- 1.5.1 Timely furnishing of required information/data to POWERGRID for enabling expeditious preparation of Detailed Project Report and technical specifications for the Unified Scheme.
- 1.5.2 Land acquisition, construction/modification of building for SLDCs as well as Sub-LDCs, residential accommodation for construction and O&M staff of respective Beneficiaries, air-conditioning, power supply arrangement and all other related works and facilities such as office equipment / vehicle etc. pertaining to establishment of Load Despatch Centres at State/ Beneficiary level.
- 1.5.3 Arranging storage space for equipments procured by POWERGRID for SLDCs, Sub-LDCs, various generating stations and sub-stations in their state.
- 1.5.4 Provide facility for receipt and proper storage of equipment pertaining to their system.
- 1.5.5 Assist in physical survey, verification and inspection of equipment on receipt and reporting damages, shortages etc. to Insurance Company and POWERGRID.
- 1.5.6 Association with the supervision of installation, testing and commissioning of all the equipments at SLDCs/Sub-LDCs, Generating Stations and sub-stations.
- 1.5.7 Submission of monthly project progress reports to PCC.
- 1.5.8 Providing free access to POWERGRID/Suppliers' staff involved in implementation of Unified Scheme to Load Despatch Centres, all substations/ generating stations and other connected places required to be visited during project implementation.
- 1.5.9 Arranging necessary shut down etc. for transmission lines, sub-stations, generating units, whenever required for erection, testing and commissioning of equipment/system.
- 1.5.10 Arranging press and gazette notifications as per Indian Electricity (Supply) Act, 1948 and Indian Telegraph Act, 1885.

- 1.5.11 Timely placement of staff as per PCC recommendation and recommend names of Engineers from the respective beneficiaries to POWERGRID for arranging training.
- 1.5.12 Participation in FAT/SAT on SLDC and Sub-LDC Systems.
- 1.5.13 Site preparation for monitoring of interface and RTU & communication equipment cabinets at generating stations/substations.
- 1.5.14 To interact with POWERGRID Project Incharge in case of non-compliance by the contractor to implement the scheme as per contract and approved drawings.

## 1.6 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF CENTRAL SECTOR GENERATING COMPANIES

- 1.6.1 Timely furnishing of required information/data to POWERGRID for enabling expeditious preparation of Detailed Project Report and technical specification for the Unified Scheme.
- 1.6.2 Providing space for installation of RTUs and interface Cabinet housing transducers and interposing relays etc. in their premises, access to CT/PT circuits & contacts for wiring of the interface cabinet and access to auxiliary power terminals to meet the power requirements of RTUs and transducers and access to PLC equipments for data transmission.
- 1.6.3 Receipt and proper storage of equipment pertaining to their system despatched by POWERGRID.
- 1.6.4 Physical survey, verification and inspection of equipment on receipt and reporting damages, shortages etc. to Insurance Company and POWERGRID.
- 1.6.5 Association with the supervision of Installation, testing and commissioning of all the equipments at their generating stations.
- 1.6.6 Necessary shut downs required for erection, testing & commissioning of the equipment/systems will be arranged as per mutually agreed programme.
- 1.6.7 Submission of monthly project progress reports for the works being carried in their area to PCC.

  
Secretary

1.6.8 Providing free access to POWERGRID/Contractor's staff involved in implementation of Unified Scheme to Load Despatch Centres, all substations/generating stations and other connected places required to be visited during project implementation.

## 2.0 OPERATION AND MAINTENANCE OF LOAD DESPATCH & COMMUNICATION FACILITIES

### 2.1 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF POWERGRID

- i) Operation and maintenance of Regional Load Despatch Centre and Central Sector telecommunications system to ensure their high availability & satisfactory operation at all times.
- ii) To provide adequate number of spares to the States as incorporated in the respective technical specifications to meet their day-to-day requirement of routine maintenance.
- iii) Operate RLDC under the overall guidance of WREB.

### 2.2 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF BENEFICIARIES (Other than Central Sector Generating Companies)

Operation and maintenance of Load Despatch and Communication systems supplied by POWERGRID in their respective jurisdiction to ensure their high availability and satisfactory operation at all times.

### 2.3 BROAD SCOPE OF WORK AND RESPONSIBILITIES OF CENTRAL SECTOR GENERATING COMPANIES

- 2.3.1 The generating companies will extend full help and co-operation to POWERGRID for maintenance of the equipments (whenever required) installed in their premises under the Unified Scheme.

## 3.0 FUNDING OF SCHEME

- 3.1 The total cost of project approved by CCEA/GOI is Rs. 262.18 Crores based on second quarter of 2000 price level. However, the cost for respective SEBs shall

be firmed out during implementation phase of project based on the requirement of the respective states.

3.2 The funding of total cost of the Unified scheme of Load Despatch and Communication facilities shall be as under :-

3.3 POWERGRID will arrange funds required for Consultancy, total design and engineering of the Unified Scheme, procurement of Load Despatch and Communication equipment, UPS system along with D.G. sets, Batteries and Chargers, erection, testing and commissioning of the Scheme by Suppliers. POWERGRID will also arrange funds for renovation of existing RLDC building, staff quarters and other related works pertaining for modernization/establishment/augmentation of Regional Load Despatch Centre and its subsequent operation and maintenance thereof.

3.4 Each Beneficiary shall arrange funds required for creation of infrastructural and other facilities such as land, building, civil works, staff quarters, air conditioning, power supply arrangement, establishment, office equipments and vehicles etc. However, as stated in clause 3.1 Load Despatch and Communication equipments will be supplied by POWERGRID for installation at the SLDCs, Sub-LDCs, sub-stations and generating stations as may be agreed between Beneficiaries and POWERGRID.

3.5 The equipment installed at SLDC/Sub LDC/substation/power station of state portion shall be operated, controlled and maintained by respective SLDCs. The ownership of the equipment procured under ULDC scheme for the state portion shall vest with POWERGRID which will be transferred to the Beneficiaries after repayment of their costs.

3.6 In case of Central sector portion RLDC, Central Sector generating stations and Sub stations, the ownership of all equipments procured under ULDC scheme shall remain with POWERGRID

#### 4.0 RECOVERY OF CHARGES BY POWERGRID

4.1 This project is being funded by the World Bank. The tariff for the project consists of two portions

- 1) RLDC portion (Central Sector)
- 2) State portion.

The tariff for the project (both for Central Sector & State portion) shall be paid by the beneficiaries based on the notification to be issued by GOI/CERC for a period of 15 years based on the life of the system. .

4.2 The capital investment made by POWERGRID along with the actual interest paid by it towards implementation of the Unified Scheme of Load Despatch and Communication facilities established through its funding shall be recovered during the life of the system from the Beneficiaries including operation and maintenance charges to the extent as decided by WREB/CERC on Load Despatch & Communication facilities established at the Regional Level through monthly charges from the date of commissioning.

- 4.3
- i) Detailed modalities and basis for recovery shall be mutually discussed and agreed upon and a separate commercial contract shall be signed between POWERGRID and various Beneficiaries for this purpose.
  - ii) Ownership of equipments/systems procured and installed at SLDC/Sub-LDCs, power stations and sub-stations together with associated communication facilities by POWERGRID shall be transferred to respective Beneficiaries at any point of time on payment of their cost to POWERGRID.

4.4 (I) The recovery of cost incurred by POWERGRID on providing Load Despatch & Communication facilities in the Region under the Unified Scheme and Operation & Maintenance thereof subsequently shall be in form of a monthly tariff taking into account the following factors : -

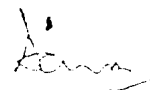
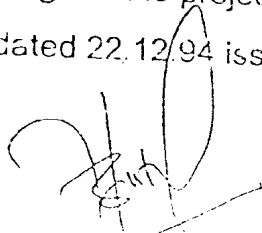
*For Regional Load Despatch Centres*

- a) Interest on loan;
- b) Amortisation or Depreciation at rates notified by Central Govt. from time to time;
- c) Return on equity at rates as prescribed by the GOI from time to time;
- d) Foreign exchange variation on foreign loans as actual;
- e) Interest on working capital;

- f) Major repair/replacement;
  - g) Any Taxes /duties etc. as payable by POWERGRID;
  - h) Insurance cost;
- (II) The recovery of cost/charges in respect of equipments/system procured and installed in Regional Load Despatch Centre of POWERGRID and their subsequent operation & maintenance under this MOU shall be recovered from the Beneficiaries (other than "Generating Companies") based on any sharing mechanism agreed by all Beneficiaries (other than Generating Companies) .
- (III) The recovery of cost/charges in respect of equipments/system supplied/erected by POWERGRID in the jurisdiction of various Beneficiaries shall also be made on fixed monthly basis apportioned to the cost incurred by POWERGRID in respect of Load Despatch & Communication facilities provided for each Beneficiaries.
- (IV) To provide adequate number of spares to the States as incorporated in the respective technical specifications to meet their day-to-day requirement of routine maintenance.
- (V) Beneficiaries shall open irrevocable & revolving Letters of Credit as per commercial agreement for payment of charges for Load Despatch and Communication facilities provided by POWERGRID.
- (VI) The escalations on O&M and other terms and conditions like surcharge on delayed payments, rebates admissible on LCs and other commercial terms and conditions shall be detailed in the commercial contract.

## 5.0 GENERAL

After implementation of Unified Scheme, provision of LD&C equipments at new projects, IPPs coming under Beneficiaries, Generating Companies are to be taken care by respective Beneficiaries, Generating Companies & POWERGRID for their jurisdiction. Provision of LD&C equipment are to be ensured at the time of feasibility stage of the project for which necessary guidelines shall be followed as per letter dated 22.12.94 issued by CEA to all constituents.



6.0 ARBITRATION

In the event of dispute/difference of opinion on any matter or terms and conditions contained in the MOU, such issues shall be mutually discussed and resolved at the REB forum, failing which the same shall be referred to Chairman, CEA or his nominee not below the rank of Member, CEA for Arbitration. The Arbitrator shall make a reasoned Award, which shall be final and binding upon the Parties. The cost of the Arbitration shall be shared equally between the parties. The Arbitration proceedings shall be in accordance with the Indian Arbitration and Conciliation Act, 1996. The venue of Arbitration shall be New Delhi.

*[Signature]*  
A. M. D. (SEMISRA)

For and on behalf of Power Grid Corporation of India Limited  
DIRECTOR (PROJECTS)

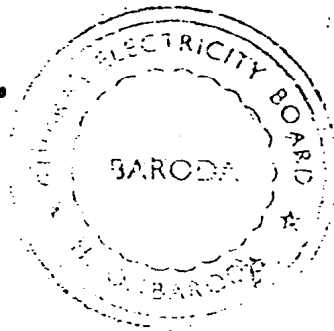
Witness

*[Signature]*  
R. N. NAYAK  
12/11/2011

*[Signature]*

For and on behalf of Gujarat Electricity Board  
SECRETARY

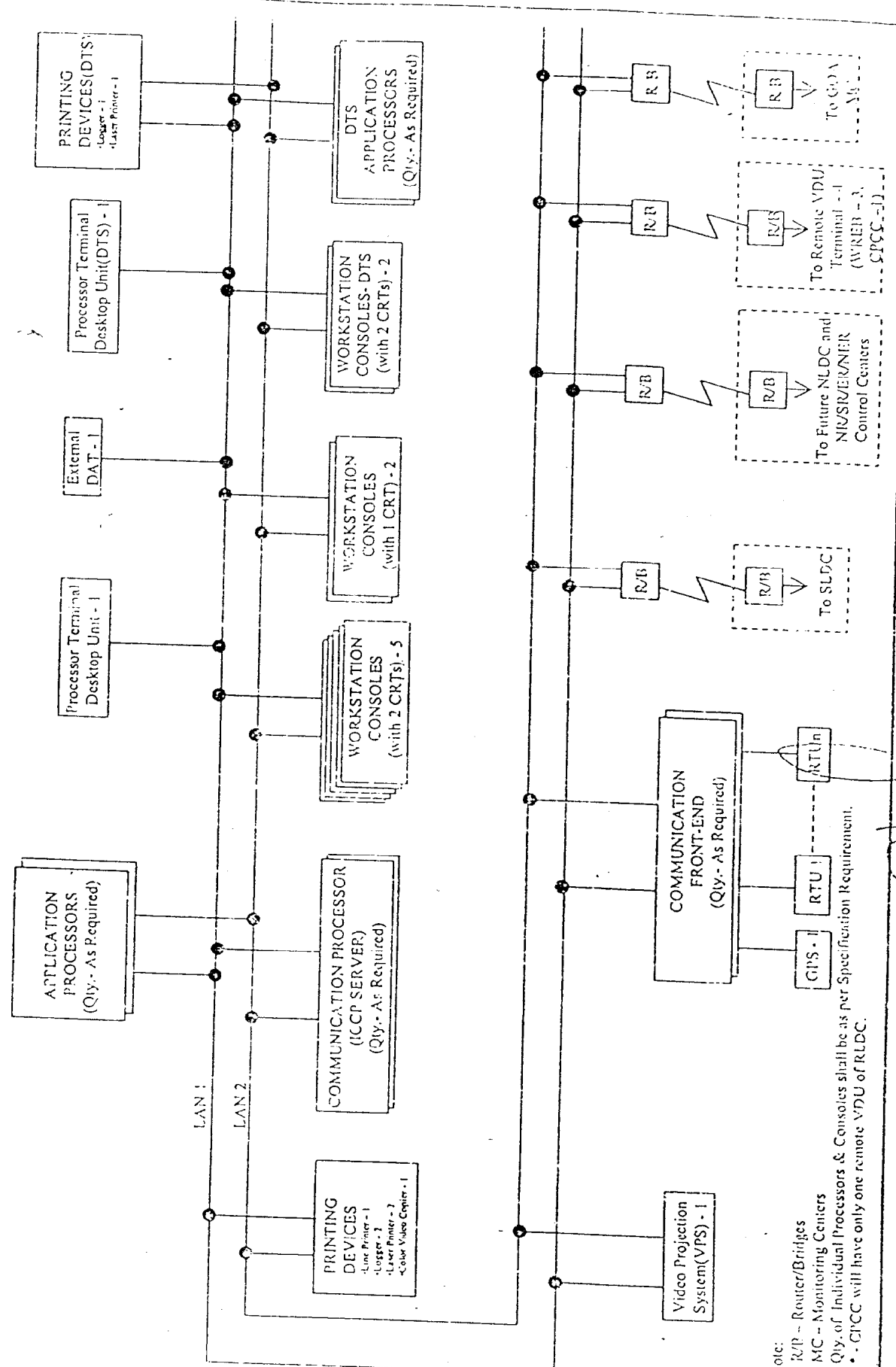
Secretary  
Gujarat Electricity Board  
BARODA



*[Signature]*  
12/11/2011



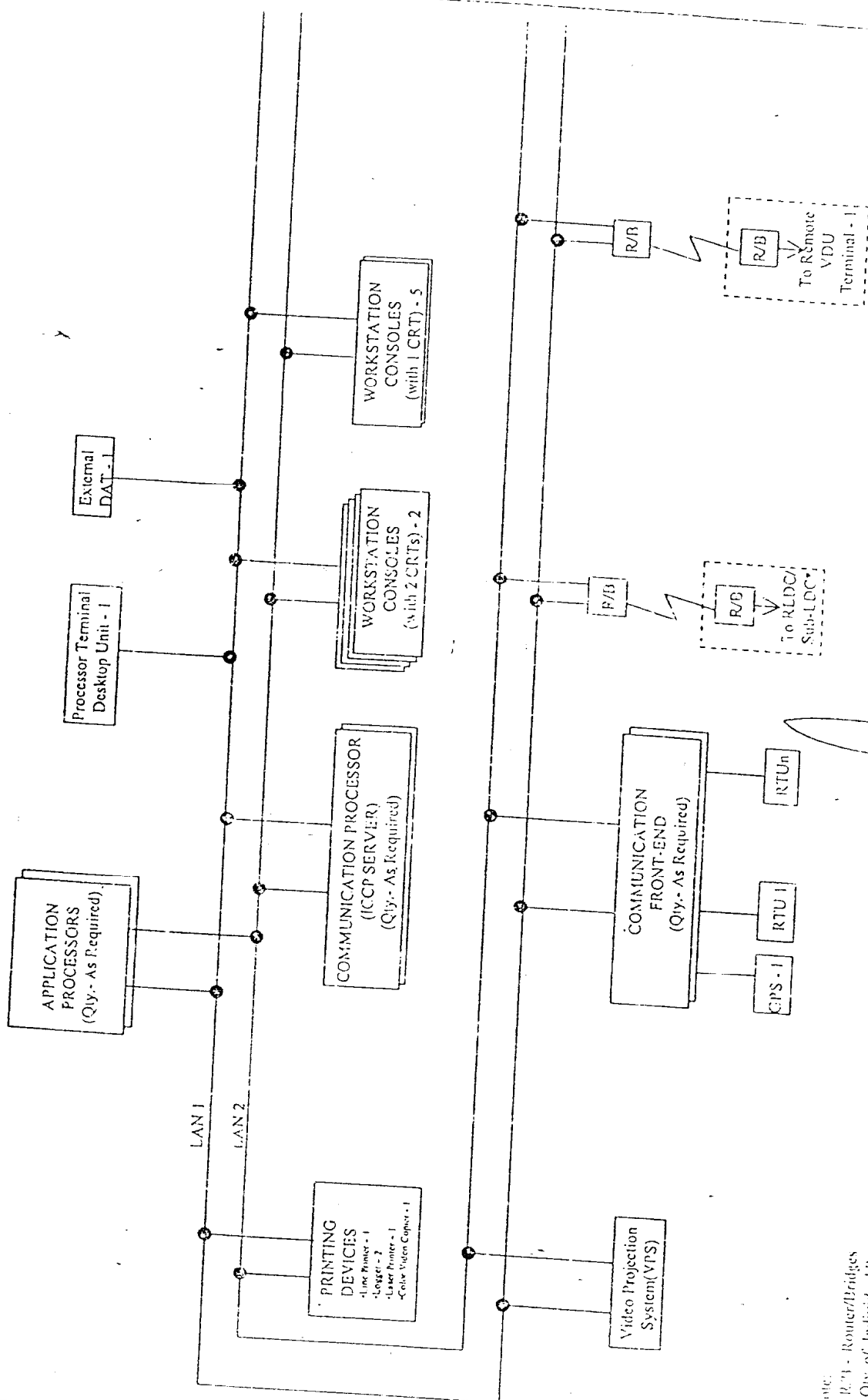
# RLDC BROAD CONFIGURATION



- Note:
1. R/B - Router/Bridges
  2. MC - Monitoring Centers
  3. Qty. of Individual Processors & Consoles shall be as per Specification Requirement.
  4. CPCC will have only one remote VDU of RLDC.

*(Handwritten Signature)*

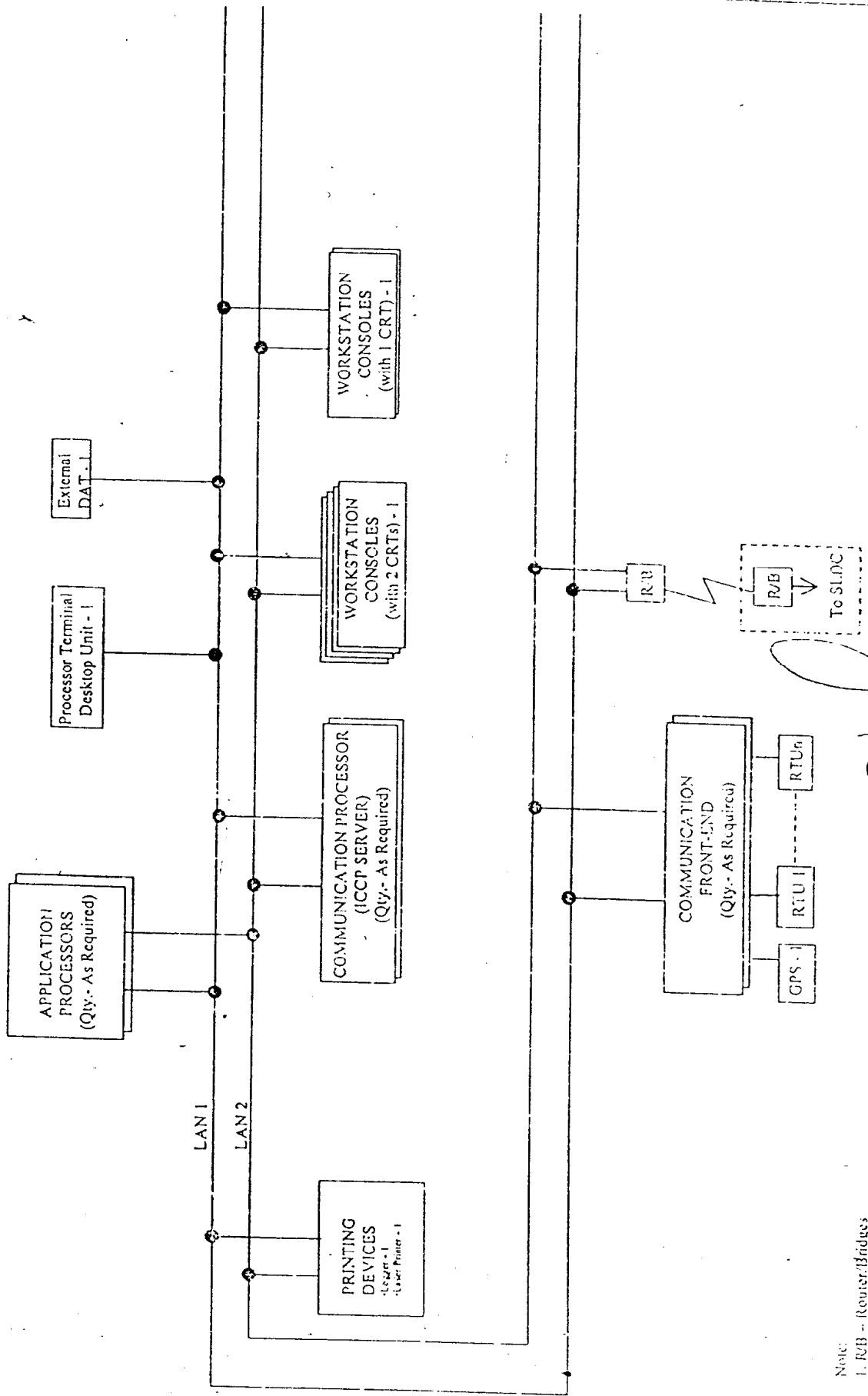
## SLDC GOTRI BROAD CONFIGURATION



- Note:
1. R/B - Router/Bridges
  2. Qty. of Individual Processors & Consoles shall be as per Specification Requirement.

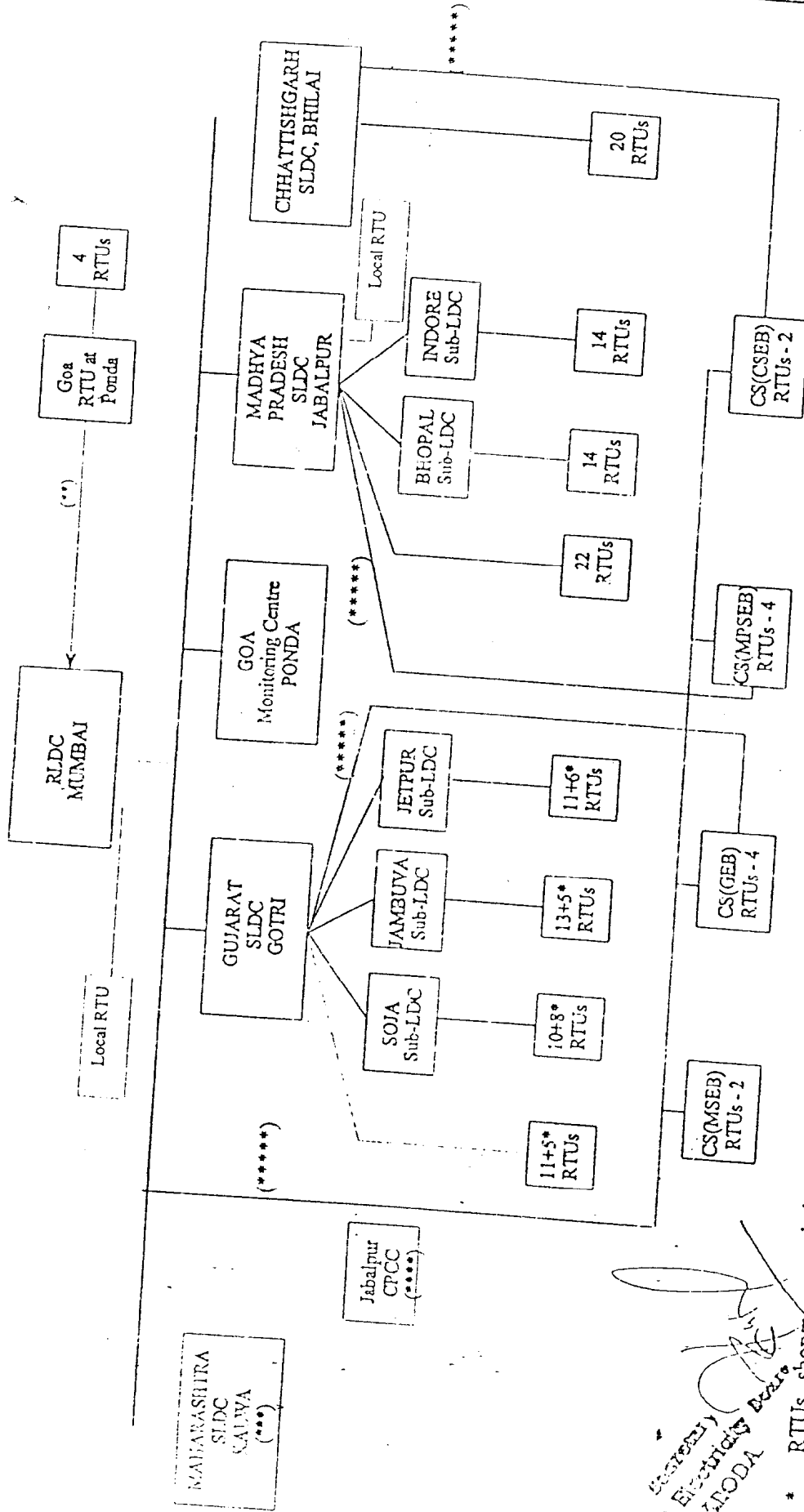
Secretary  
Sujata Electric

**SUB-LDC SOJA, JAMBUVA & JETPUR  
BROAD CONFIGURATION**



Note:  
1. R/B - Router/Bridges  
2. Qty. of Individual Processors & Consoles shall be as per Specification Requirement.

# WESTERN REGION HIERARCHICAL LOAD DESPATCH CENTRE ORGANISATION



\* RTUs shown are existing and are not part of this Project. These RTUs shall be integrated.  
 \*\* RTU at Ponda(Goa) is working as Data Concentrator, collecting data from 4 other RTUs of Goa and further transmitting it to FEP at RSCC.  
 \*\*\* Being Implemented by MSEB on their own.  
 \*\*\*\* CPCC will have only one remote VDU of RLDC.  
 \*\*\*\*\* Second redundant port of RTU shall be utilized to communicate respective SLDC/Sub-LDC in which the Central Sector RTU is located.

Director  
 Western Electricity Board  
 BANGALORE