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Government of India  
Ministry of Power

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Shram Shakti Bhawan, Rafi Marg,  
New Delhi, the 13<sup>th</sup> October, 2008

**Office Memorandum**

**Sub : Record of discussions of the meeting held under the chairmanship of Secretary (Power) at 11.00 AM on 7<sup>th</sup> October, 2008 in Vigyan Bhawan regarding Implementation of the Report of the Committee on “Manpower, Certification and Incentives for System Operation and Ring Fencing Load Despatch Centres (LDC)”.**

The undersigned is directed to forward herewith a copy of the Record of discussions of the meeting held under the chairmanship of Secretary (Power) at 11.00 AM on 7<sup>th</sup> October, 2008 in Vigyan Bhawan regarding Implementation of the Report of the Committee on “Manpower, Certification and Incentives for System Operation and Ring Fencing Load Despatch Centres (LDC)”.

It is requested that follow up action as mentioned in para 47 of the record of discussions and Annex-II i.e. ‘Action Plan for implementation of the recommendations of the Committee’ may please be taken urgently.

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Ministry of Power

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**Record of discussion of the Meeting held on 7<sup>th</sup> October, 2008 under the chairmanship of Secretary (Power) to consider the implementation of Report of the Committee on “Manpower, Certification and Incentives for System Operation and Ring Fencing Load Despatch Centres”.**

Secretary (Power), Shri Anil Razdan chaired a meeting of State Regulators, State Power Secretaries and State Utilities to consider the implementation of Report of the Committee on Manpower, Certification and Incentives for System Operation and Ring Fencing Load Despatch Centres (LDCs).

2. List of participants is enclosed as **Annex-I**.

3. Shri Gireesh B. Pradhan, Additional Secretary, Ministry of Power welcomed the participants and stated that the Committee constituted by Government of India consisted of members representing Ministry of Power, Central Electricity Authority, Central Transmission Utility, State Governments, State Transmission Utilities and Power Finance Corporation. He said that the Committee had considered the views and suggestions received from the State governments and State Electricity Regulatory Commissions. He stated that the recommendations of the Committee were practical, doable and achievable. He emphasized that ring-fencing the Load Despatch Centres and financial autonomy were important steps and added that the meeting had been organized to take the report forward.

4. Secretary (Power) said that the objective of the meeting was to follow up actions for implementation of Recommendations of the Committee to ensure Independence for System Operation which is mandated in the Electricity Act. He said that ‘System Operation’ was a specialized function and the System Operators must be given the importance that they deserve. He opined that the Load Despatch Centres were facing difficulty in attracting and retaining talent and therefore special allowances similar to Air Traffic Controllers needs to be given to System Operators. He stated the State Load Despatch Centres had more onerous responsibility with the rapid expansion of power system, participation of private investors and introduction of Open Access. He remarked that the Committee had submitted an excellent report and the recommendations must be put into action immediately. He requested for whole hearted support from the Regulatory Commissions so that the actions could be completed within the timeline suggested in the report. He said that Union Ministry of Power and Central Electricity Authority (CEA) would provide the necessary support to implement the recommendations. He added that the CTU model was now available and the operational details could be obtained for clarifications.

5. Shri Lokesh Chandra, Director (Transmission), Ministry of Power gave a presentation on the report to apprise the delegates regarding the methodology adopted by the Committee, the major findings of the survey of Load Despatch

Centres in India and the recommendations of the Committee. He also placed a detailed Action Plan for implementation of recommendations of the report. Copy of the action plan and the presentation are enclosed as **Annex-II** and **Annex-III** respectively.

6. Secretary (Power) sought views and suggestions of SERCs.

7. Member, Rajasthan Electricity Regulatory Commission (ERC) said that the Committee report was good and requested for clarification regarding the selection authority, qualification, appointment and tenure of the Head of LDC. He stated that the Head of LDC should have some form of immunity from frequent transfers to ensure independent functioning.

8. Secretary (Power) said that he was open to ideas with regards to selection, tenure and accountability of the Head of LDC and suggested that LDC-Head could be appointed by the Government just as in case of Electricity Regulatory Commission. He opined that the selection could be through a 'selection committee' or a 'search committee' could be constituted to locate a qualified professional and offer appointment. He emphasized that the Load Despatch Centres should not be considered as an extended arm of the Regulatory Commission.

9. Secretary, Punjab State ERC appreciated the recommendations of the report and stated that Punjab State Electricity Board was still a bundled utility.

10. Member, Meghalaya SERC congratulated the Committee members for their innovative recommendations and said that the Meghalaya Electricity Board had yet to be reorganized. He opined that the procedure for selection of the LDC personnel was important.

11. Secretary (Power) said that the recommendations of the Committee could be implemented even in a bundled structure. He suggested that the System Operators could be given special allowances like in case of Air Traffic Controllers, pilots and IT professionals without the need to adjust the pay scale structure.

12. Member, Madhya Pradesh ERC said that Madhya Pradesh SLDC was a part of the TransCo but separate SLDC fees and charges were being given for last two years. SLDC accounts had been separated. He added that separate cash stream for SLDC would have to be developed in case SLDC is separated from Transco.

13. Member Jharkhand SERC said that the recommendations of the Committee were as per the requirements and remarked that a capable and independent SLDC was indispensable for reliable and quality power supply. He opined that the funding arrangement for LDC was critical for carrying out the capital investment in LDC. He suggested that condition based grants or soft loans could be provided. He also suggested that POWERGRID could be given the responsibility of providing

consultancy for CAPEX plans on chargeable basis. He added that this was required for ensuring uniformity across all LDCs.

14. Chairman, Jammu and Kashmir ERC said that the National umbrella structure mentioned in the report could be taken up first to ensure opportunities for career progression and mobility for the personnel in LDCs.

15. Member, Haryana ERC said that the report had been well documented and it was the prime need of the hour. He stated that SLDC charges had been separated in Haryana for last two years. He emphasized that system augmentation and up gradation was the crying need of the hour and HERC would give approval to the CAPEX plan as and when they are submitted before them. He concurred with the views expressed by Jharkhand ERC regarding the funding arrangement.

16. Member, Gujarat ERC said that SLDC in Gujarat was a part of GETCO, fees and charges of SLDC had been separated and GETCO was yet to file separate accounts. He highlighted the important role played by the SLDC with the introduction of intra state ABT, upcoming IPPs, Captives and renewable generation and the challenges posed by natural disasters. He expressed confidence in the capability and competence of the staff of Gujarat SLDC.

17. Director (Engg) from Delhi ERC said that DERC had notified MYT norms in October 2007 wherein approval by DERC was required for investments greater than Rs.1 crore. He stated that few of the DERC regulations would have to be amended if there was a consensus on approval of rolling CAPEX plans and collection of fees and charges from generators as well. He requested for norms also for non-executive staff at SLDC.

18. Secretary, Chhattisgarh ERC said that they were in agreement with the recommendations of the Committee. He informed that in Chhattisgarh the SLDC was functioning within CSEB as integrated utility. He added that Commission had specified the SLDC operating charges and suggested that the ARR could include the CAPEX of SLDC.

19. Chairman, Bihar SERC remarked that the report was excellent and they were in agreement with all the recommendations. He informed that Bihar ERC conducted public hearing only in case of ARRs. All the other proposals were uploaded on their website and the approvals were given after considering the comments received. He opined that Section 142 of the Electricity Act may be used by the ERCs for enforcing accountability of the LDC-Head. He also said that the time was too short to create independent utility and that a funding mechanism was required.

20. Secretary, CERC stated that CERC was concerned about the independence of SLDC and added that efforts were being made to harmonize the Open Access Regulations in all states. He informed that Open Access to Gujarat Fluorochemicals in Rajasthan had been recently granted after a lot of persuasion and that it was a

positive sign. He opined that there was conflict of interest between STU and Discoms. With regards to collection of fees and charges from the generators he clarified that the notification by the Ministry of Power through the “removal of Difficulties” clause had been requested by CERC and the notification did not amend the Act but only cleared the difficulty in collecting charges from those “using the interstate transmission” as well as those “engaged in interstate transmission”. Secretary CERC informed the house that CERC was in the process of bringing a regulation on the LDC fees and charges. He stated that the legal strength for training and certification of System Operators was also derived from the Indian electricity Grid Code wherein it is mandated to staff the control room with suitably qualified and trained personnel. He suggested that IEGC could be suitably expanded. He also said that more opportunities for capacity building of the regulators and ERC staff would be created.

21. Secretary (Power) said that the Forum of Regulators (FOR) could help in harmonizing the implementation of the recommendations.

22. Principal Secretary (Energy), Government of Uttar Pradesh said that they were in agreement with the report except the proposal for creating an umbrella structure. He said that a professional body was needed for managing scarcity. He stated that there are special requirements such as in case of festivals and fair distribution was not always possible. He expressed concern that having an independent body would make it difficult to divert power to take care of the special needs of an area and to avoid law and problems.

23. Secretary (Power), said that load management was the role of the Discoms and the Load Despatch Centre was expected to take decisions in real-time in the best interest of the security of the power system. He emphasized that there was a well laid out system for generation and load scheduling in accordance with the contracts between the buyer and seller and added that the LDCs were not supposed to allow inappropriate diversion of power in real-time. He further said that under special circumstances the government could direct the LDCs and in such cases LDCs would give preference just as an ATC gives preference to an aircraft in distress. He urged that there was a need to create independent SLDCs to create an environment for investments in power sector. He explained that the investors were not bound by law to make investments in power sector and a credible system needs to be created to give a degree of comfort for business to carry on.

24. Advisor LD, Rajasthan said that SLDCs should not be considered as a dumping ground by the STU and stability of tenure must be given to the SLDC officers.

25. Secretary (Power) called for suggestions on this subject and said that the work at LDC was highly stressful and the LDC staff needed to be suitably compensated and de-stressed.

26. MD, UPPCL said that massive technological up-gradation and automation was required at SLDCs. He added that UPPCL looked forward to the support of POWERGRID in this regard.

27. Member (Power System), CEA said that the Energy Management System could assist the System Operators in decision making. Secretary (Power) suggested that a Member (PS), CEA could organize a workshop in association with ED (SO), POWERGRID on these aspects.

28. SE, (LD & GO), TNEB said that TNEB had yet to be unbundled. Secretary (Power) advised him that SLDC independence or ring fencing could be envisaged in unified or unbundled systems.

29. Secretary (Power) said that the face and complexion of power sector would change with massive investments by private sector and he reiterated that independent functioning of SLDCs was to be facilitated irrespective of unbundling or restructuring.

30. Principal Secretary (Power), Govt. of Haryana said that Shri Gireesh Pradhan deserved compliments for an excellent report. He expressed concern on the capability of a small organization of 60-70 executives with regards to recruitment and funding of CAPEX plan. He suggested that CAPEX plans needed to be synchronized and could be funded through a scheme. He also highlighted the need for developing parameters to judge LDCs and individuals working at LDCs

31. Secretary (DOE), Govt. of Bihar said that funding of CAPEX plan was crucial.

32. Secretary (Power) stated that funding of CAPEX plan would not be possible through the Central Government budget because no new scheme was to be sanctioned in the middle of the 11<sup>th</sup> Plan as per the advisory of Ministry of Finance. He said that State Governments could fund the CAPEX. He suggested that a small group could examine the possibility of funding from multilateral agency or from international market in the form of Seller's Credit.

33. Chief Engineer (SLDC), Chhattisgarh said that they agreed with the recommendations of the Committee.

34. MD, GETCO said that they would try to form a subsidiary of STU. He requested the Committee to specify the qualifications of the LDC-Head. He expressed satisfaction over the capability of the SLDC staff and informed that training was being organized in their own training centre with the help of EREDA. He stated that ARR was being worked out and CAPEX would require large amount of coordination with RLDCs as in case of network planning. He said that he was satisfied with the existing SCADA/EMS although many functions were not being used. He suggested that analysis of outages was also required and added that a divisional head for Project Management could be added in the organization structure.

35. Representative from Maharashtra said that in the changing scenario LDCs were being watched by all and therefore training and certification of System Operators was required. He informed that in Maharashtra SLDC was operating under STU but functioning independently and the SLDC expenses were being approved since 2006 by SERCs. He stated that SLDC was ISO certified since 2006, SoPs were being submitted to MERC, intrastate ABT was in place though on marginal cost basis, money was being collected by MSETCL, SLDC people were being sent for in-house as well as outside training and senior people were sharing knowledge with freshers before posting them to control desk.

36. MD, MPPTCL stated that SLDC accounts had been separated but presently there was no separate balance sheet. He said that most engineers in SLDC were from GENCO and some from TRANSCO. He added that recruitment of people was required in line with the recommendations but the state government had permitted recruitment only upto 5 % of the sanctioned strength. He opined that the establishment of a separate training institute was important and added that the SLDC staff could be given special allowances as people in GENCOS and TRANSCO would ask for parity if a new pay structure was specified for LDCs. He appreciated the report and expressed confidence that the recommendations of the report would not be difficult to implement.

37. Member (Distribution), PSEB said that their SLDC was equipped with 23 engineers and they were being given special pay. He added that fresh engineers were being recruited.

38. Secretary, Govt. of NCT, Delhi said that they would work towards implementation of the recommendations as per the action plan.

39. GM (SLDC), Orissa appreciated the report and said that they were willing to implement the recommendations. He informed that SLDC was presently not fully independent and there was shortage of staff. He expressed concern that lateral placements might hamper the promotion opportunities for the juniors.

40. Dr. Subramaniam from CPRI Bangalore said that CPRI had developed 5-modules for the course and the course material for training the SLDC staff could be developed in collaboration with IIT-Chennai and IISc Bangalore. He added that study module could comprise of self-study through a common study material, 2-3 weeks of classroom training including sessions on Training Simulator followed by examination. He emphasized that considering the shortage of manpower the classroom duration would have to be kept low.

41. Director General, NPTI said that NPTI was already organizing training course on System Operation. He stressed that there was no need for a separate central training institute as PSTI was a Central body. He suggested that the training courses being organized by various agencies in System Operation had to be harmonized, an

evaluation system would have to be created and a Certification Board would have to be constituted.

42. Chairperson, CEA said that training of System Operators was important because they needed to have knowledge of Generation, Transmission and Distribution as well as Market Operation and Regulation. He stated that in any power system any indiscipline or wrong operation by one utility could show its effect 1000s of km away. He informed that CEA had developed a course on Electric Supply and Safety. He suggested that for System Operation course planning could be done in a centralized mode while implementation could be done in either a centralized or decentralized mode. He assured full support from CEA for implementing the recommendations of the Committee's Report.

43. Summing up the discussions Secretary (Power) thanked the delegates for participating in the meeting. Secretary (Power) said that as all the State Regulators, State Governments and Utilities had endorsed and supported the recommendations, the implementation needed to be put on fast track. Secretary (Power) constituted three task forces for effective monitoring and implementation of the recommendations of the Committee.

44. The first Task Force for Implementation of the Report would be chaired by Member (Power Systems), CEA and co-chaired by Joint Secretary (O&M) Ministry of Power. ED (NLDC), Power Grid, Chief Engineer (Grid Management), CEA and representatives from the State Governments of Uttar Pradesh, Bihar, Madhya Pradesh, Assam and Tamil Nadu would be the Members. Director (OM), Ministry of Power would be the Member Secretary of the Task Force. The States were requested to appoint an officer in-charge, preferably the Secretary (Energy / Power) for implementation of the recommendation of the Committee.

45. The second Task Force for examining the Financial Aspects and Emoluments Issues would be chaired by CMD, Power Finance Corporation and Director (Finance), Power Grid, Principal Secretary (Power), Haryana, Principal Secretary, Govt. of Karnataka, MD Transco Gujarat would be Members and Secretary CERC would be Member Secretary of the Task Force.

46. The third Task Force on Manpower Selection and Recruitment would have Chairperson, CEA as Chairman of the Task Force, representative from Rajasthan Electricity Regulatory Commission, Secretary Energy, Government of Delhi as Members and Joint Secretary (Administration), Ministry of Power will be the Member Secretary.

47. The other Committees as suggested by the Committee need to be constituted by respective organisations / authorities immediately. The Committees would complete the action assigned to them within the suggested time frame.



48. The next review meeting would be organized in November 2008 and a round up meeting would be held in March 2009.

The meeting ended with a vote of thanks to the Chair.

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**List of participants**

**S/No. Name & Designation**

**Ministry of Power**

1. Sh Anil Razdan, Secretary
2. Sh Anil Kumar, Additional Secretary
3. Sh Gireesh B. Pradhan, Additional Secretary
4. Sh. Jayant Kawale, Jt. Secretary,
5. Sh V.P. Joy, Jt. Secretary,
6. Sh. I.C.P. Keshri, Jt. Secretary,
7. Sh Lokesh Chandra, Director (Trans),
8. Sh. Malay Srivastava, Director (R&R)
9. Smt. Bina Prashad, Director (T&R)
10. Sh A K Saxena, Director (OM)
11. Sh Srikara Naik, Director (Planning)

**Central Electricity Authority**

12. Sh. Rakesh Nath, Chairperson
13. Sh. V. Ramakrishna, Member (PS)
14. Sh T. Chatterjee, CE (GM)
15. Sh B. K. Jain, Director

**State Regulatory Commissions**

16. Sh B K Halder, Chairman, BERC
17. Sh N K Rupwani, Secretary. SERC
18. Sh B K Sahu, Director ( Engg) DERC
19. Sh S R Pandey, Dy. Director, GERC
20. Sh T R Dhaka, Member, HERC
21. Sh K B Pillai, Chairman, J&K ERC
22. Sh Mushtaq Ahmad, Chief Engineer, J&K ERC
23. Sh P C Verma, Member, JSERC
24. Sh J B Poon, MeSERC
25. Ms Namita Sekhon, Secretary PSERC
26. Sh K L Vyas, RERC
27. Sh C S Sharma, Member ( Eco) MPERC

**Central Electricity Regulatory Commission**

28. Sh Alok Kumar, Secretary

**State Government**

29. Sh S K Mehta, Chief (Engg), LD, Chhattisgarh
30. Sh Rajesh Gupta, Secretary (DOE), Bihar
31. Sh Rajendra Kumar, Secretary, Govt. of NCT of Delhi

32. Sh A K Kaul, GM, Delhi Transco Ltd.
33. Sh S K Negi, MD, GETCO, Gujarat
34. Sh. Ashok Lavasa, Principal Secretary, Haryana
35. Sh Niraj Gulati, Chief Engineer, HVPNL, Haryana
36. Sh S R Sarangi, Liaison Officer, Haryana
37. Sh D K Chaurasia, ESE/CLD, Jharkhand
38. Sh S N Chaudhary, JSEB, Jharkhand
39. Sh Suresh Babu, Chief Engineer, KPTC, Karnataka,
40. Sh P.V. Bale Subramaniam, Addl. Director, Karnataka
41. Sh P B Hote, SLDC, MSETCI, Mumbai, Maharashtra
42. Sh H L Parthasarathy, Chief Engg. (SO) P/E, Mizoram
43. Sh R K Verma, CMD, MPPTCL, Madhya Pradesh
44. Sh R P Sharma, OSD ( SLDC) MPPTCL, Madhya Pradesh
45. Sh S C Mudali, GM (SLDC) OPTCL, Orissa
46. Sh R K Duggal, PSEB, Punjab
47. Sh H S Brar, Member, PSEB, Punjab
48. Sh K S Jolly, Advisor, PSEB, Punjab
49. Sh B. L. Jain, Advisor (Load Despatch), Rajasthan
50. Sh V Chandran, SE LD&GO, TNEB, Tamil Nadu
51. Dr J N Chamber, Pr Secretary (Energy), Uttar Pradesh
52. Sh A K Awasthi, MD, UPPCL, Uttar Pradesh
53. Sh Pradip Shukla, Chairman, UPPCL, Uttar Pradesh
54. Sh Mukesh Chandra, UPPCL, Uttar Pradesh
55. Sh V P Trivedi, SE, UPPCL, Uttar Pradesh
56. Sh V P Tiwari, Director, UPPCL, Uttar Pradesh
57. Sh D Ganguly, CE, SLDC, WBSETCL, West Bengal

### **Central Public Sector Undertakings**

#### **Power Grid**

58. Sh S K Chaturvedi, CMD
59. Sh S. K. Soonee, ED (SO)
60. Sh R.G. Yadav, ED (OS)
61. Sh V. Mittal, ED (NLDC)
62. Sh Ashwini Jain, GM (NLDC)
63. Sh V K Agrawal, GM (NRLDC)

- 64. Sh N S Sodha, GM (LD & C)
- 65. Sh I R Kidwai, GM (HR)

**BBMB**

- 66. Sh U C Misra, Chairman
- 67. Sh R K Kaul, Director

**NHPC**

- 68. Sh Kamal Kapoor, Executive Director

**NEEPCO**

- 69. Sh V K Abbey, CMD

**DVC**

- 70. Sh G Chaudhary, Resident Director

**CPRI**

- 71. Dr P V Balasubramanyam, Jt. Director (CCAR)

**NPTI**

- 72. Dr N S Saxena, Director General

## Action Plan for implementation of the recommendations of the Committee

### Recommendation 1

**6.1a** “The Appropriate Government should take suitable steps to facilitate independent functioning of the Load Despatch Centres in line with the Electricity Act 2003 and National Electricity Policy. To begin with, the State Governments are urged to create a separate representative board structure for governance of LDCs on the lines of wholly owned subsidiary being created for the independent System Operation of RLDCs and NLDC.”

**6.1b** “The financial accounts should be separated for all LDCs by 31<sup>st</sup> March 2009 with the appropriate Electricity Regulatory Commissions (ERC) specifying the fees and charges payable.”

SNo	Actions to be taken	Action by	Target
1	Valuation of assets at the LDC and identify O&M expenses. Apportion all the LDCs expenses under suitable heads – System Operation, Market Operation, Logistics and Services.	STUs, SLDCs	30 <sup>th</sup> Nov 08
2	Prepare audited Balance Sheet, Profit & Loss Account	STUs, SLDCs	31 <sup>st</sup> Mar 09
3	Prepare the budget for LDC for the next financial year	STUs, SLDCs	31 <sup>st</sup> Mar 09

**6.1c:** “Capital Expenditure (CAPEX) plans for modernization of all LDCs during 2009-12 should be submitted and the approval of the respective Electricity Regulatory Commission (ERC) should be obtained by 31<sup>st</sup> March 2009. The Central Transmission Utility (CTU) and Regional Load Despatch Centres (RLDCs) should extend the necessary assistance to SLDCs in this area.”

**6.1d** “In the next stage, rolling 5-year CAPEX plans should be prepared by each LDC and got approved by the respective ERCs to take care of the system expansion, associated real-time data requirements as well as technological innovations and obsolescence of control centre equipment. ERCs may examine *CAPEX proposal* considering a shorter life cycle of 7-10 years for such equipment.”

S.No	Actions to be taken	Action by	Target
1	Prepare a plan(including future requirements) for installing and commissioning RTUs and Communication System in consultation with CTU/ STU	SLDC/ RLDC STU/ CTU	30 <sup>th</sup> Nov 08
2	Identify capital expenses required for LDC augmentation in terms of IT hardware and software, renovation & modernization activities at the LDC and expenses such as Interest on loans, Depreciation, O & M expenses, Interest on Working Capital	SLDC/ RLDC/ NLDC	31 <sup>st</sup> Dec 08
3	File a petition for approval of CAPEX	SLDC/ RLDC/ NLDC	31 <sup>st</sup> Mar 09
4	Yearly review of activities listed above for preparation of rolling five year plans	CTU/STUs, RLDCs/NLDC /SLDCs	30 <sup>th</sup> June every year

**Recommendation 2:**

*“For making LDCs financially self-reliant, the Electricity Regulatory Commissions (ERCs) should recognize the three distinct revenue streams*

*(a) Fees and charges for system operation.*

*(b) Tariff for decision support system and IT infrastructure (currently only ULDC tariff)*

*(c) Operating charges for scheduling, metering and settlement for market players.*

*All Generating Companies and licensees using the services of the LDCs would make all the above payments. In addition the LDCs could provide value added services (studies, manpower development, reports, access to data archives etc), on chargeable basis.”*

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
1	Develop the general principles and philosophy for funding LDCs, sharing of expenditure. Identify revenue streams such as Fees and charges, ULDC tariff, Open Access, Consultancy services, Other income	FOR	31 <sup>st</sup> Dec 08
2	Work out the annual revenue requirement and the amounts payable by entities like generating stations, transmission licensees and load serving entities who have to share the LDC expenditure as per the ERC order.	SLDCs/ RLDCs/ NLDC	31 <sup>st</sup> Dec 09
3	File a petition before the Appropriate Commission for segregation of revenue streams for LDCs into fees and charges; ULDC tariff, Open Access, Consultancy charges and other income	CTU, RLDCs STUs, SLDCs	31 <sup>st</sup> Dec 09

**Recommendation 3:**

**6.3a** “Introduction of a system of certification of System Operators by an independent Central body, similar to the system followed in case of Air Traffic Controllers.

**6.3b** “Establishment of a Central Institute for training of System Operators. Initially the National Power Training Institute (NPTI) may be entrusted with the responsibility of training and certification.”

**6.3c** “Within the next one year, all the course material, systems and procedures required for administering a “basic level” of training and certification should be developed.”

**6.3d** “All LDCs must ensure that all the personnel of LDCs undergo this ‘basic level’ training and certification and only certified personnel staff the LDCs within two years from the release of this report. The appropriate Electricity Regulatory Commissions would be furnished with an Annual Compliance Report of this requirement. Subsequently advanced level training and certification programme must be introduced.”

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
1	Constitution of committee for the training of System Operators	CEA	31st Oct 08
2	Formation of a committee for Certification Procedure	CEA	31st Oct 08
3	Notification to assign the responsibility of Training and Certification of System Operators to NPTI	CEA	31 <sup>st</sup> Oct 08
4	Proposal from NPTI regarding course layout and time duration	NPTI	30 <sup>th</sup> Nov 08
5	Identification of other institutes for training of System Operators	CEA	31 <sup>st</sup> Mar 09
6	Finalization of basic level training course material	NPTI,CEA	31 <sup>st</sup> Aug 09
7	Finalization of the Online system for Certification	NPTI,CEA	31 <sup>st</sup> Dec 09
8	Completion of basic level training by NPTI	NPTI	31 <sup>st</sup> Aug 10
9	Compliance report filed by all LDCs in appropriate commission	SLDC NLDC RLDC	31 <sup>st</sup> Mar 11

**6.3e** “Fresh recruitment at regular intervals for lowering the average age of the work force in the LDCs.”

**6.3f** “Introduction of suitably designed courses in the Indian Institutes of Technology and National Institutes of Technology for ensuring availability of skilled manpower.”

**6.3g** “Active collaboration of LDCs with educational institutes for research and development related to Indian power system and electricity market operation.”

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
1.	Formation of a committee to design suitable course at IITs, NITs, IIMs etc. for sponsored candidates from LDC. The committee may also explore possibilities of grant from multilateral institutions to fund these initiatives	CEA	30 <sup>th</sup> Nov.08
2.	Prepare a MoU for collaboration of LDCs and educational institutes in research and higher studies	NLDC	31 <sup>st</sup> March 09
3.	MoU signing between LDC and educational institutes	SLDC RLDC NLDC	31 <sup>st</sup> Dec. 09

#### **Recommendation 4**

**6.4a** “The highly specialized and technical nature of LDC function necessitates a suitable compensation structure to attract and retain talent. The compensation structure for LDC personnel should be substantially higher than comparable companies in the power sector both in the public as well as private.

**6.4b** “Apart from the compensation structure, innovative incentive schemes, such as sabbaticals for higher learning and opportunities for Professional Engagement (PE) in the form of attending seminars/workshops and conferences both in India and abroad must be provided.”

**6.4c** “Once the certification system is introduced, monetary incentives similar to Air Traffic Controllers can be provided to the System Operators based on their ratings.”

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
1	Formation of a committee to study existing compensation structure in different SLDCs, at RLDCs/NLDC and in other public/private organizations in power sector, identify good practices, develop bench marks, identify deficiencies and give recommendations. The committee may also suggest ways in which incentives could be developed for LDC personnel	MoP	31 <sup>st</sup> March 09

### **Recommendation 5**

**6.5a** “For standardizing and harmonizing the LDCs work, the committee recommends The NLDC in consultation with CEA, would lay down the “Standard Operating Procedures” (SOPs) which would be adopted by the SLDCs. Suitable Quality Standards and an Integrated Management System (IMS) may also be implemented.”

**6.5b** “A ‘Forum of Load Despatch Centres’ with the secretariat provided by National Load Despatch Centre must be established. This Forum could take up issues of common interest and also formulate a Code of Ethics for the LDC personnel.”

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
1.	Preparation of SOP	NLDC, CEA	31 <sup>st</sup> March 09
2.	RLDCs obtain ISO 9001 certification	RLDC	31 <sup>st</sup> March 09
3.	ISO certification of SLDCs	SLDCs	31 <sup>st</sup> March 10
4.	Formation of FOLD	FOR	30 <sup>th</sup> Nov. 08
5.	Draft Statement of Objectives of Forum of Load Dispatchers(FOLD),Drafting a Charter for FOLD and Creation of website	FOLD	31 <sup>st</sup> March 09
6.	Preparation of a list of opportunities for Professional Engagements in India and abroad.	FOLD	31 <sup>st</sup> March 09
7.	Awards for - best LDC (state) - best LDC (RLDC/NLDC) - best Load Dispatcher (individual)	CEA	31 <sup>st</sup> June 09

**6.5c** At a future date, if all the State Governments agree, an umbrella structure of SLDCs integrated with RLDCs and NLDC may be considered.

The above issue may be discussed at appropriate level by MoP.



**Report of the Committee  
on  
Manpower, Certification and Incentives  
for  
System Operation  
and  
Ring-fencing Load Despatch Centres**

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# Background

- **The Electricity Act, 2003**
  - The spirit of the act is to ensure independence for System Operation
- **Interactive session 5<sup>th</sup> November 2007**
  - Organized by Ministry of Power, Govt. of India
  - Participation: Forum Of Regulators, State Governments, CTU
- **Suggestions from SERCs and State governments**
- **Constitution of the Committee**

- **Committee examined various aspects related to functioning of the Load Despatch Centres**
- **Need to create an environment where Load Despatch Centres have**
  - **Functional autonomy**
  - **Independent and sustainable revenue streams**
  - **Adequately staffed with people having the right skills, equipment and incentives to deliver**

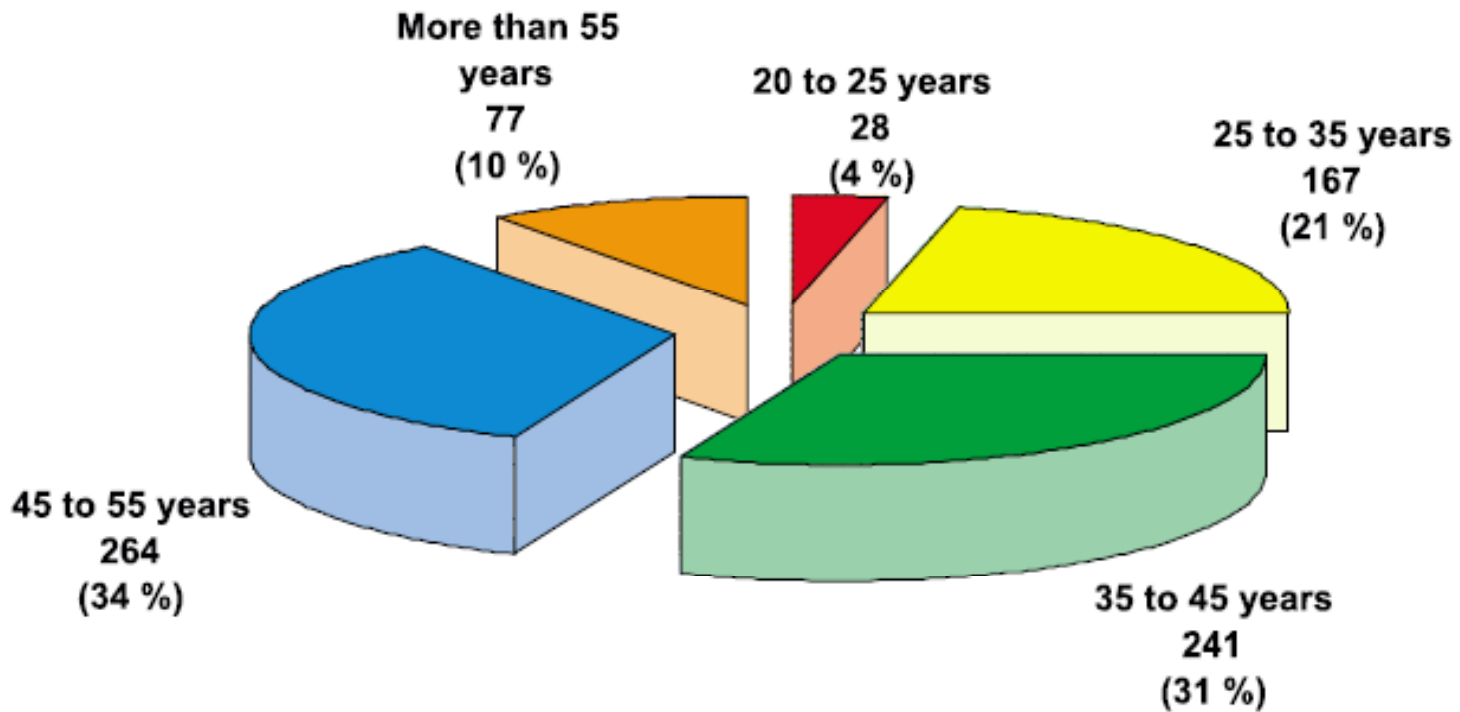
# **Approach adopted by the Committee**

- **Meetings: 15<sup>th</sup> Apr, 15<sup>th</sup> May and 11<sup>th</sup> Aug 2008**
- **Literature survey**
- **Approach Paper**
- **Survey of LDCs in the state/regional/ national level**
- **Visit to office of the Executive Director, Air Traffic Management, AAI, at Rajiv Gandhi Bhawan, New Delhi**
- **Visit to Air Traffic Control Tower at New Delhi Airport**
- **Draft Report**
- **Discussion**
- **Final Report**

# **Survey of Load Despatch Centres (LDCs) in India**

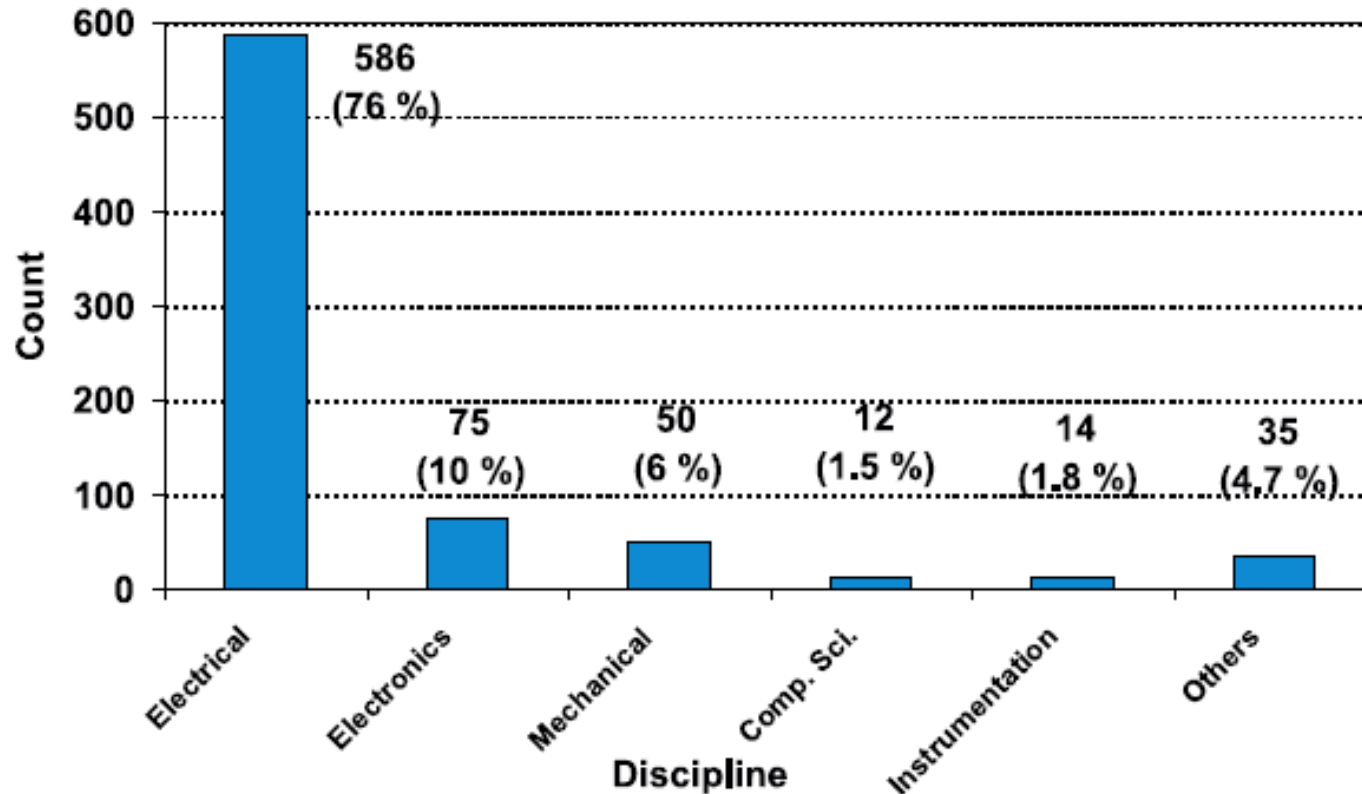
- **Random survey of LDC personnel**
- **777 participated out of 1200**
- **For evaluation of**
  - **Manpower profile**
  - **Opinion on Certification of System Operators and Importance of Ethics**
  - **Training opportunities**
  - **Working environment**
  - **General facilities available**
- **Survey report as Annex-VII of the report**

# Age-profile of personnel posted in LDCs in India



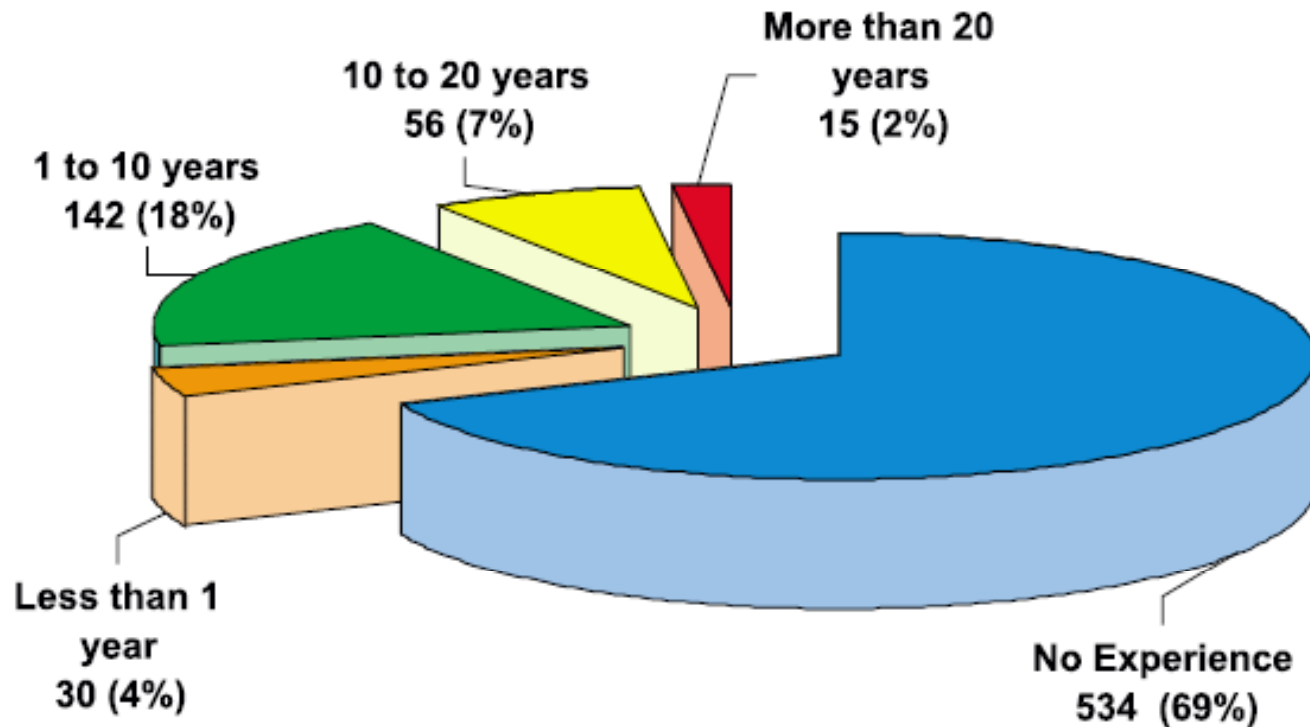
**44 % above 45 years of age**

# Background of LDC personnel in India



**76% personnel are from electrical background**

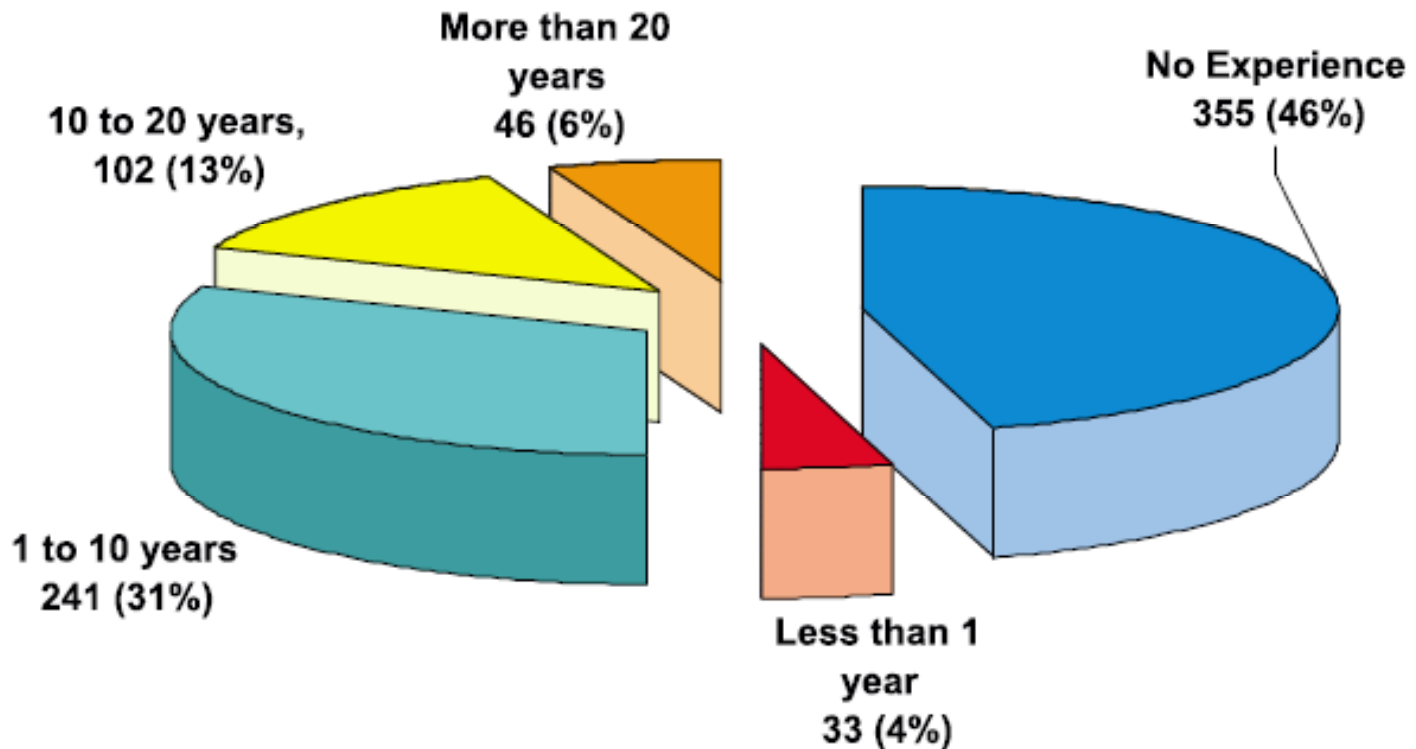
# Work experience of LDC personnel in Generation



**69% do not have experience in generation**

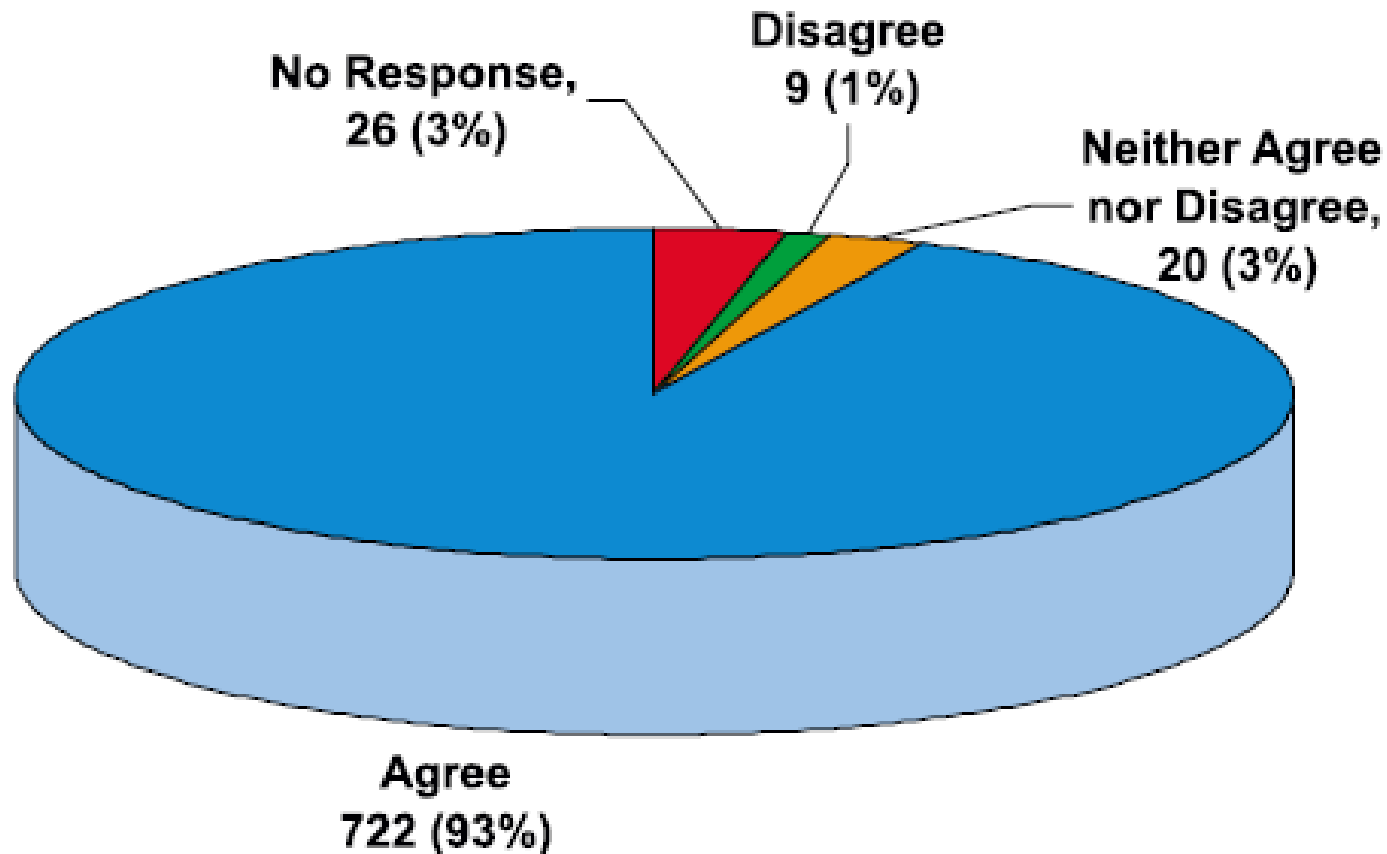


# Work experience of LDC personnel in T & D



**46% employees do not have T&D experience**

# Opinion regarding Certification



**93% employees felt the need of certification**

# Manpower requirement

- **Head-LDC**
  - **Divisional Heads**
    - **System Operation**
      - **Reliability Coordination**
      - **Ancillary Services**
    - **Market Operation**
      - **Open Access and scheduling**
      - **Settlement System**
      - **Pool Account Administration**
    - **System Logistics**
      - **Visualization and Decision Support**
      - **Information Technology and Communication**
    - **Services**
      - **Regulatory Affairs**
      - **Training and Certification**
      - **Establishment Services**
- Ideal Rotating Shift with**  
**One Shift Charge Manager**  
**One Executive- System Security**  
**One Executive- Resource Scheduling**  
**One Executive-Open Access**

# **Manpower requirement**

**On an average 60-70  
professionals may be required  
at a typical LDC**

**Present strength is around 1200  
Total requirement of 2200-2600**

# **Need for training and certification**

- **Rapidly growing power system**
- **Increasing complexity**
- **Huge strategic and commercial stakes**
- **Credibility of entire Electricity Supply Industry partly in the hands of System Operators**

# Comparative study with ATCs

- **Centralized training institute**
- **Compulsory induction training and in-service mandatory trainings.**
- **Certification, proficiency tests are mandatory**
- **Assignment of ratings on the basis of proficiency tests**
- **Rating based incentives**

# **Need for attractive compensation and incentives**

- **System Operation a specialized function**
- **Substantial physiological stress**
- **Long-term commitment needed**
- **Attracting and retaining talent is a challenge**
- **Need to encourage System Operation as a profession**

# **Ring-fencing and Functional Autonomy**

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# Comparison of charges for various services in ESI

S No.	Services in the ESI	Paise per kWh
1.	Energy charges (for coal fired)	100-200
2.	Energy charges (for RLNG)	500-600
3.	Energy charges (for naphtha)	1000-1200
4.	Inter State Transmission (Long term)	10-20
5.	Inter State Transmission (Short term)	3-9
6.	Trading Margin	4
7.	Power Exchange	1

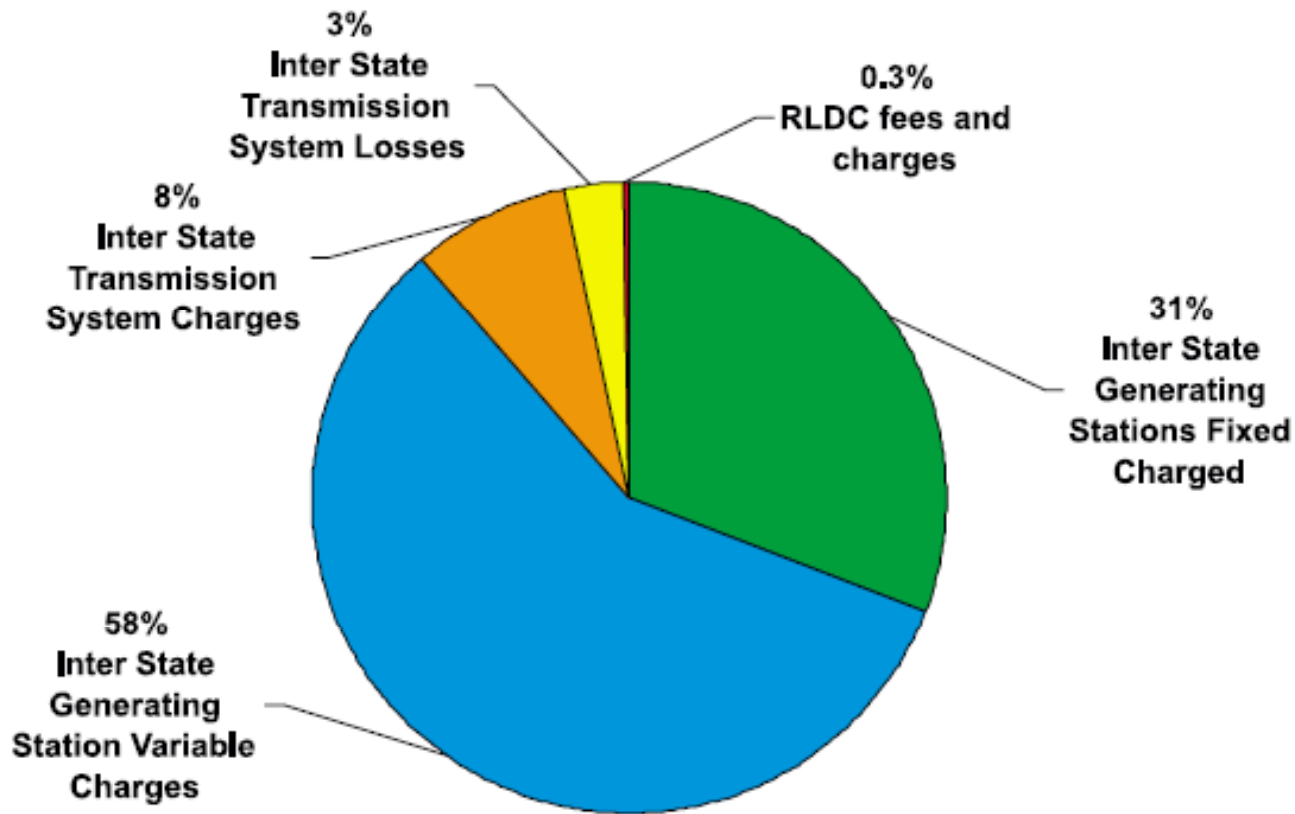
## Separate outlay for Load Despatch Centres needed

Assuming an Annual Charge of Rs. 1000 crore for all LDCs and anticipated generation of 1000 BU by 2012

Cost of System Operation = 1 paisa per unit

Would go down as the volume and system size increases

# Composition of Annual Business volume at regional level



Similar composition expected in state level.

LDCs would help in optimizing the expenses incurred in fuel charges and transmission losses that are 61 % of the total expenses.

# Funding pattern of LDCs

- **Through budgetary allocations**
- **Provision of “fees and charges” in Electricity Act has been implemented Only by 7 States**
- **LDC services availed by all generating companies, licensees and market players**
  - **Presently charges shared only by the state beneficiaries in case of RLDCs**
- **Independent stream of revenue needed for LDCs**

**Recommendations of the Committee  
and  
proposed action plan**

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# Recommendation-1

- a. Creation of a representative Board structure for governance**
- b. Separation of financial accounts for all LDCs...31st Mar-09**

<b>SNo</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
<b>1</b>	<b>Prepare audited Balance Sheet, Profit &amp; Loss Account</b>	<b>STUs, SLDCs</b>	<b>31<sup>st</sup> Mar 09</b>
<b>2</b>	<b>Prepare the budget for LDC for the next financial year</b>	<b>STUs, SLDCs</b>	<b>31<sup>st</sup> Mar 09</b>

# Recommendation-1

- c Capital Expenditure (CAPEX) plans for modernization of all LDCs during 2009-12 by 31st Mar-09 (Assistance by CTU / RLDCs)**
  
- d Rolling 5-year CAPEX plans**

<b>S.N o</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
1	Prepare a plan(including future requirements) for installing and commissioning RTUs and Communication System in consultation with CTU/ STU	SLDC/ RLDC STU/ CTU	30 <sup>th</sup> Nov 08
2	Identify capital expenses required for LDC augmentation in terms of IT hardware and software, renovation & modernization activities at the LDC and expenses such as Interest on loans, Depreciation, O & M expenses, Interest on Working Capital	SLDC/ RLDC/ NLDC	31 <sup>st</sup> Dec 08
3	File a petition for approval of CAPEX	SLDC/ RLDC/ NLDC	31 <sup>st</sup> Mar 09
4	Yearly review of activities listed above for preparation of rolling five year plans	CTU/STUs RLDCs/NLDC/ SLDCs	30 <sup>th</sup> June every year



## **Recommendation-2**

- **Three distinct revenue streams regulated by appropriate Commission**
  - a. **Fees and Charges for System Operation**
  - b. **Tariff for decision support system and IT infrastructure (Currently ULDC tariff)**
  - c. **Operating charges for scheduling, metering, energy accounting and settlement**
- **Payment of above by all generating companies and licensees using services of LDCs**
- **Value added services on chargeable basis**

<b>S. N o</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
<b>1</b>	<b>Develop the general principles and philosophy for funding LDCs, sharing of expenditure. Identify revenue streams such as Fees and charges, ULDC tariff, Open Access, Consultancy services, Other income</b>	<b>FOR</b>	<b>31<sup>st</sup> Dec 08</b>
<b>2</b>	<b>Work out the annual revenue requirement and the amounts payable by entities like generating stations, transmission licensees and load serving entities who have to share the LDC expenditure as per the ERC order.</b>	<b>SLDCs/ RLDCs/ NLDC</b>	<b>31<sup>st</sup> Dec 09</b>
<b>3</b>	<b>File a petition before the Appropriate Commission for segregation of revenue streams for LDCs into fees and charges; ULDC tariff, Open Access, Consultancy charges and other income</b>	<b>CTU, RLDCs STUs, SLDCs</b>	<b>31<sup>st</sup> Dec 09</b>

# Recommendation-3

- a. Certification' of System Operators by an independent central body similar to system followed in case of Air Traffic Controllers.**
- b. Establishment of a Central Institute for training of System Operators. Initially National Power Training Institute (NPTI) may be entrusted with the responsibility of training**
- c. Course material, systems and procedures for “basic level” within the next one year**
- d. Only certified operators within next two years; Compliance Report to ERCs; Subsequent introduction of Advanced level training and certification programme**

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
<b>1</b>	<b>Constitution of committee for the training of System Operators</b>	<b>CEA</b>	<b>31st Oct 08</b>
<b>2</b>	<b>Formation of a committee for Certification Procedure</b>	<b>CEA</b>	<b>31st Oct 08</b>
<b>3</b>	<b>Notification to assign the responsibility of Training and Certification of System Operators to NPTI</b>	<b>CEA</b>	<b>31<sup>st</sup> Oct 08</b>
<b>4</b>	<b>Identification of other institutes for training of System Operators</b>	<b>CEA</b>	<b>31<sup>st</sup> Mar 09</b>
<b>5</b>	<b>Proposal from NPTI regarding course layout and time duration</b>	<b>NPTI</b>	<b>30<sup>th</sup> Nov 08</b>
<b>6</b>	<b>Finalization of basic level training course material</b>	<b>NPTI,CEA</b>	<b>31<sup>st</sup> Aug 09</b>
<b>7</b>	<b>Finalization of the Online system for Certification</b>	<b>NPTI,CEA</b>	<b>31<sup>st</sup> Dec 09</b>
<b>8</b>	<b>Completion of basic level training by NPTI and certification of existing LDCs personnels</b>	<b>NPTI</b>	<b>31<sup>st</sup> Aug 10</b>
<b>9</b>	<b>Compliance report filed by all LDCs in appropriate commission</b>	<b>SLDC NLDC, RLDC</b>	<b>31<sup>st</sup> Mar 11</b>

## **Recommendation-3 (continued)**

- e. Fresh recruitment at regular intervals for lowering the average age of work force in the LDCs**
  
- f. System Operation courses in IITs/NITs**
  
- g. Active collaboration of LDCs with educational institutes for research and development related to Indian power system and electricity market operation**

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
<b>1</b>	<b>Formation of a committee to design suitable course at IITs, NITs, IIMs etc. for sponsored candidates from LDC.</b>	<b>CEA</b>	<b>30<sup>th</sup> Nov.08</b>
<b>2</b>	<b>Prepare a MoU for collaboration of LDCs and educational institutes in research and higher studies</b>	<b>NLDC</b>	<b>31<sup>st</sup> March 09</b>
<b>3</b>	<b>MoU signing between LDC and educational institutes</b>	<b>SLDC RLDC NLDC</b>	<b>31<sup>st</sup> Dec. 09</b>

## **Recommendation-4**

- a. The compensation structure for LDC personnel should be substantially higher than comparable companies in the power sector both in the public as well as private.**
- b. Apart from the compensation structure, innovative incentive schemes, adequate opportunities for higher learning and opportunities for Professional Engagement (PE) in the form of attending seminars/workshops and conferences both in India and abroad**
- c. Subsequent to introduction of certification system, monetary incentives to System Operators based on their ratings**

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
<b>1</b>	<b>Formation of a committee to study existing compensation structure in different SLDCs, at RLDCs/NLDC and in other public/private organizations in power sector, identify good practices, develop bench marks, identify deficiencies, suggest incentives and give recommendations.</b>	<b>MoP</b>	<b>31<sup>st</sup> March 09</b>



## **Recommendation-5**

- **The systems and procedures adopted at each LDC to conform to suitable Quality Standards and an Integrated Management System (IMS).**
- **A ‘Forum of Load Despatch Centres’**
  - **Secretariat by National Load Despatch Centre**
  - **To take up issues of common interest and also formulate a Code of Ethics for the LDC personnel.**
- **At a future date, if all the State Governments agree, an umbrella structure of SLDCs integrated with RLDCs and NLDC may be considered**

<b>S.No</b>	<b>Actions to be taken</b>	<b>Action by</b>	<b>Target</b>
<b>1</b>	<b>Preparation of SOPs</b>	<b>NLDC, CEA</b>	<b>31<sup>st</sup> March 09</b>
<b>2</b>	<b>RLDCs obtain ISO 9001 certification</b>	<b>RLDC</b>	<b>31<sup>st</sup> March 09</b>
<b>3</b>	<b>ISO certification of SLDCs</b>	<b>SLDCs</b>	<b>31<sup>st</sup> March 10</b>
<b>4</b>	<b>Formation of FOLD</b>	<b>FOR</b>	<b>30<sup>th</sup> Nov. 08</b>
<b>5</b>	<b>Draft Statement of Objectives of Forum of Load Dispatchers(FOLD),Drafting a Charter for FOLD and Creation of website</b>	<b>FOLD</b>	<b>31<sup>st</sup> March 09</b>
<b>6</b>	<b>Preparation of a list of opportunities for Professional Engagements in India and abroad.</b>	<b>FOLD</b>	<b>31<sup>st</sup> March 09</b>
<b>7</b>	<b>Awards for</b> <b>- best LDC (state)</b> <b>- best LDC (RLDC/NLDC)</b> <b>- best Load Dispatcher (individual)</b>	<b>CEA</b>	<b>31<sup>st</sup> June 09</b>

**Thank You**

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