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SAARC Training for Professionals of Afghanistan on Pakistan's Power Regulatory System (Performance Standards & Monitoring)

19th September, 2019

National Electric Power Regulatory Authority (NEPRA)



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Scheme of Presentation:

1 Part-I: Role of M&E Standards Department as per NEPRA Act, 1997

2 Part-II: Performance Standards

2.1 Performance Standards (Generation) Rules (PSGR) - 2009

2.2 Performance Standards (Transmission) Rules (PSTR) - 2005

2.3 Performance Standards (Distribution) Rules (PSTR) - 2005

3 Part-III: Codes of Conduct

3.1 Grid Code & Grid Code Addendas

3.2 Distribution Code **3.3** Safety Code

4 Part-IV: Monitoring of Performance Standards

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Part-I

Role of M&E Standards

Department as per NEPRA

Act, 1997

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● Standards Department's Mandate as per NEPRA Act

As per **NEPRA Act**, the Authority is required to **develop/ prescribe/ encourage** regulatory framework and **ensure compliance** through **monitoring and enforcement** of NEPRA rules, regulations, and applicable documents with respect to Standards and Codes of Conduct. Major provisions of the Act which describe these regulatory instruments: -

Sr. No.	Provision of Law	Section	Description	Remarks
1	NEPRA Act	Section 7(2)(c) & 34	"Specify and Enforce Performance Standards for Generation, Transmission, and Distribution Companies"	PSGR- 2009, PSTR – 2005 & PSDR – 2005
2	NEPRA Act	Section 7(3)(c) & 35	"Specify Uniform Industry Standards and Code of Conduct for Generation, Transmission, and Distribution Companies"	Grid Code – 2005 Distribution Code – 2005, Safety Code – 2015
3	NEPRA Act	Section 47	The Authority may, make regulations not inconsistent with the provisions of this Act or the rules, for carrying out of its functions.	Net Metering/Distributed Generation Regulations, 2015
4	NEPRA Act	Section 27A & 27B	Investigations, Fines/Penalties	SOP is being prepared

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Part-II

Introduction to Performance Standards

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- Development of Performance Standards
- Ensure Compliance & Enforcement/Implementation of Performance Standards
 - Annual Performance Reports /Quarterly Performance Reports
- Analysis of Annual/Quarterly Reports
 - Preparation of Performance Evaluation Reports (PERs)
 - Uploading of PERs on NEPRA web – Donor's Requirement
- Review of Performance Standards



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● For Generation Licensees

- Performance Standards (Generation) Rules (PSGR) 2009
- Grid Code
- Safety Manuals by Generation Licensees

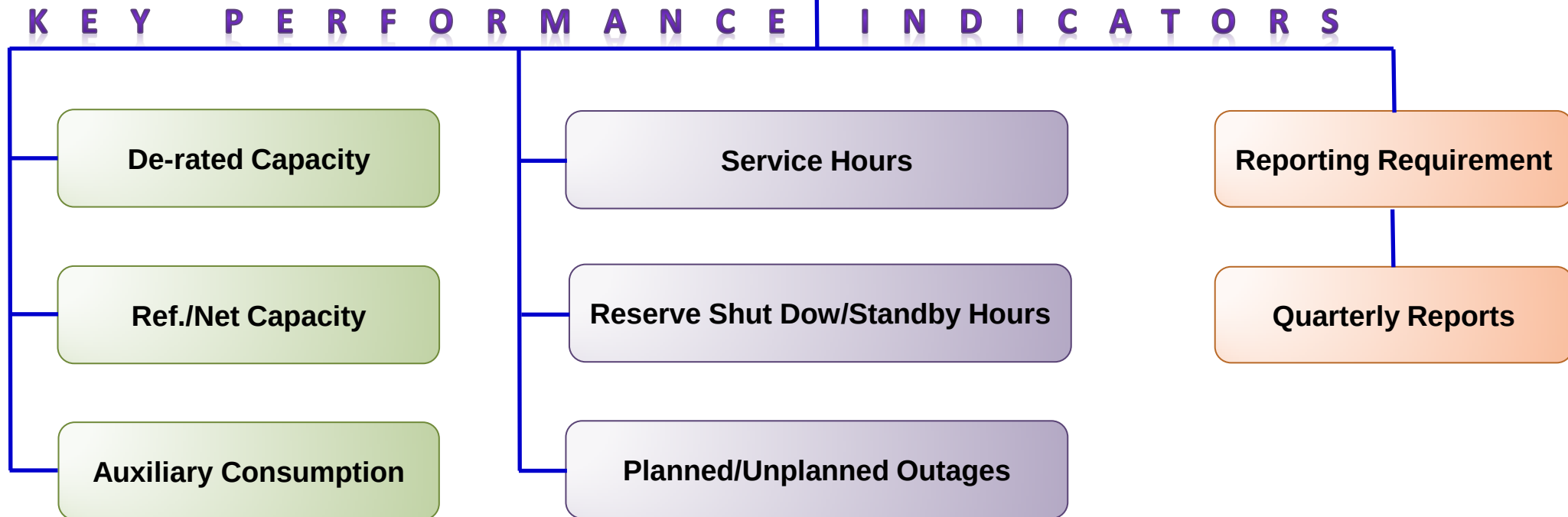
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Performance Standards (Generation) Rules (PSGR) 2009



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● Assignments

- Preparation of **Performance Evaluation Reports** of GENCOs and IPPS;
- Enforcement of Performance Standards (Generation) Rules 2009, through **field visits** and subsequent **analysis**/evaluation of data;
- Initiation of **Legal** Proceedings and subsequent imposition of Fines due to Excess Auxiliary Consumption and Higher Outages;
- Enforcement of **Market Operator Rules** and **Commercial Code** by ensuring the Imposition of **LDs by CPPA-G** on **non-performance** of Public Sector GENCOs and subsequently initiation of legal proceedings;
- Initiation of legal proceedings against NTDC/NPCC on account of issuing unfair instructions to put the machines of GENCOs on standby mode for unexplainably longer period – **Grid Code**;
- Review of Performance Standards (Generation) Rules into Regulations as per **amended Act**;

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● For Transmission Licensees

- Performance Standards (Transmission) Rules (PSTR) 2005
- Grid Code
- Safety Code & Development of Safety Manuals by NTDCL and K-Electric

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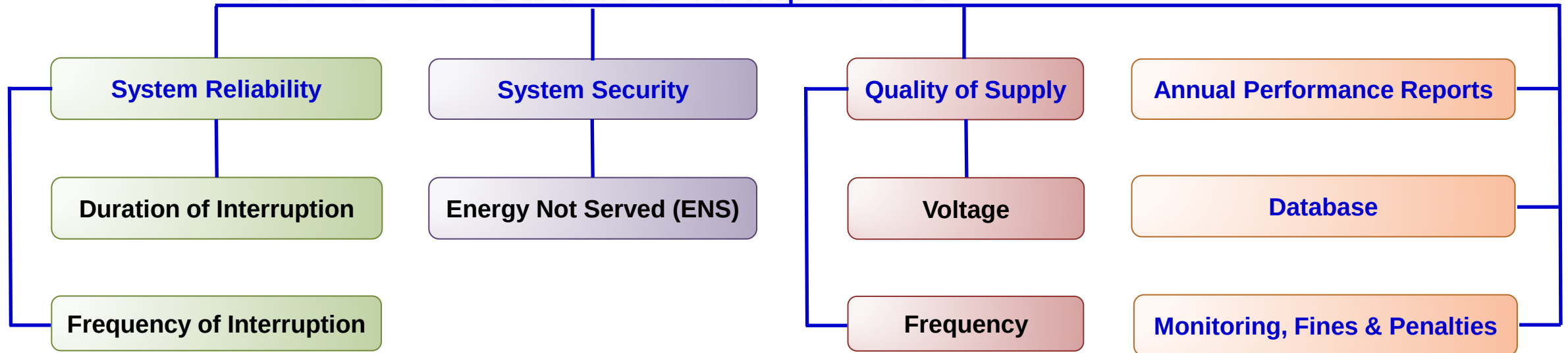


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Performance Standards (Transmission) Rules (PSTR) 2005

KEY PERFORMANCE INDICATORS



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● Assignments

- Preparation of **Performance Evaluation Report** of Transmission Licensees;
- Enforcement of Performance Standards (Transmission) Rules 2005, through **analysis**/evaluation of data;
- Initiation of **Legal** Proceedings and subsequent imposition of Fines;
- Working on **authenticity**/correctness of data submitted by TRANSCOs;
- Review of Performance Standards (Transmission) Rules into Regulations as per **amended Act**;
- Development of Performance Standards for Electricity Traders as per **amended Act**.



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- For Distribution Licensees
 - Performance Standards (Distribution) Rules (PSDR) 2005
 - Distribution Code
 - Safety Code & Development of Safety Manuals by DISCOs

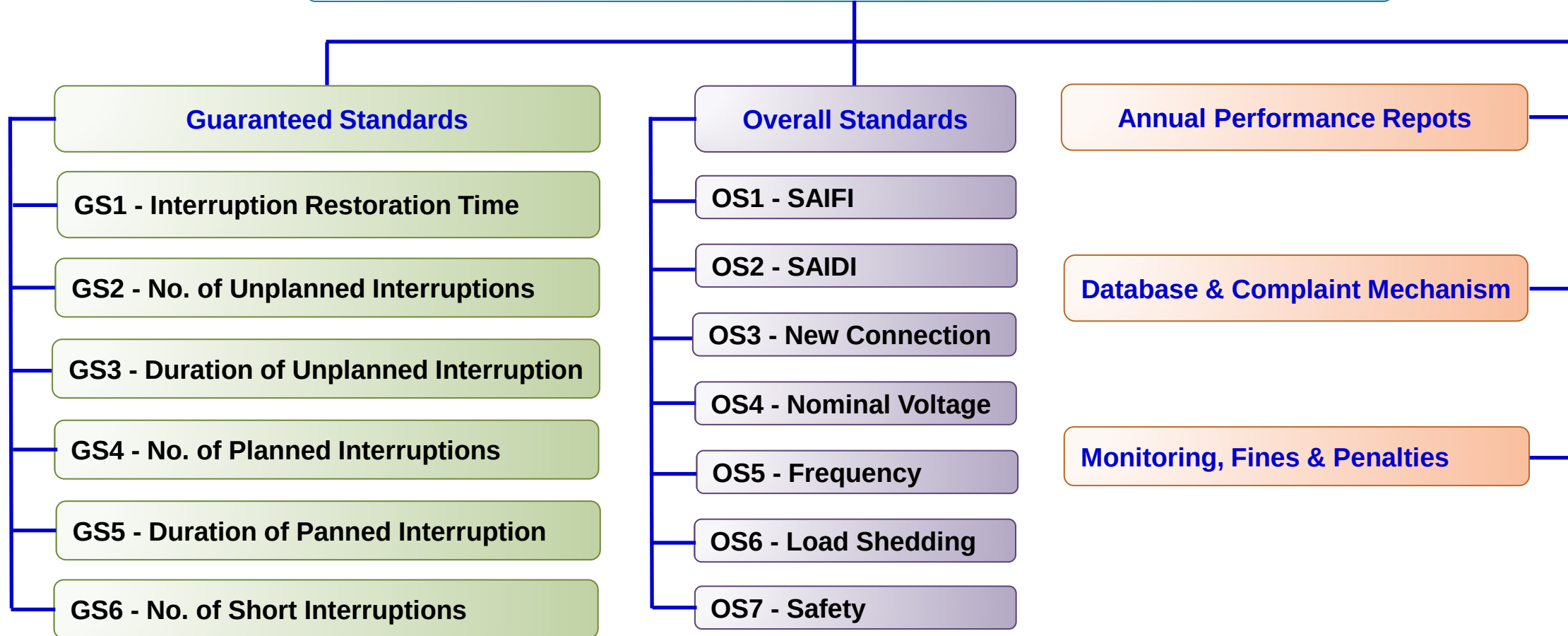
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Performance Standards (Distribution) Rules (PSDR) 2005



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● Assignments

- Preparation of **Performance Evaluation Reports** of DISCOs and ;
- Enforcement of Performance Standards (Distribution) Rules 2005 through **monitoring** and Technical/Performance **Audit** of DISCOs;
- Initiation of **Legal** Proceedings and subsequent imposition of Fines;
- **Review** of Reliability Standards (Development of SAIFI & SAIDI targets for upcoming three years;
- Working on **authenticity**/correctness of data submitted by DISCOs;
- Implementation of **Safety Standards** by vigorously pursuing the compliance with respect to Safety Standards;
- Development of **Safety Manuals** as per approved Power **Safety Code**;
- Review of Performance Standards (Distribution) Rules into Regulations as per **amended Act** and development of Standards for **Electricity Suppliers**.

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Part-III

Codes of Conduct

Grid Code, Distribution Code, Safety Code

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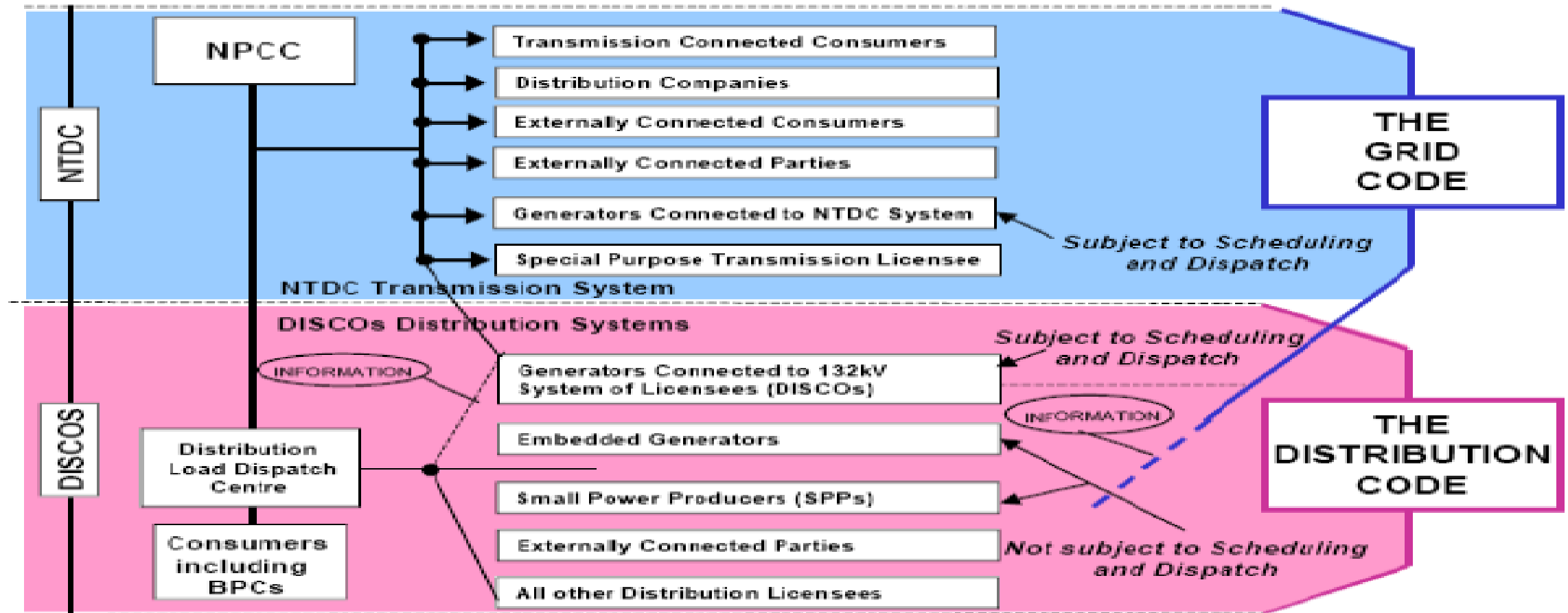


● Grid Code, 2005

- Covers day-to-day and long term principles, standards, procedures and guidelines for **Planning, Operation, Dispatch, and Connection** purposes for normal and abnormal NTDC transmission system conditions.
- To ensure that the NTDC's transmission System can be developed, operated, and maintained in an efficient, safe, reliable and coordinated manner. The Code is expected to encourage competition between Generators, Distribution Companies, and BPCs as the Market Structure Develops.



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● Grid Code Review Panel (GCRP)

- NTDC shall establish and maintain the Review Panel, which shall be a standing body and shall:
 - a. keep the Grid Code and its working under review;
 - b. review all suggestions for amendments to the Grid Code;**
 - c. publish recommendations to NEPRA for approval;**
 - d. issue guidance on Grid Code and its implementation;
 - e. resolve disputes between NTDC and its Code Participants;
 - f. study and evaluate suggestions from different parts of the power market;
 - g. consider the modifications which are necessary to the Grid Code arising out of unforeseen circumstances and Force Majeure.



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● Grid Code Addendas

- Grid Code Addendum-I for grid integration of Wind Power Plants – 2010
 - ▶ Grid Code Addendum-I (Revision-1) for grid integration of Wind Power Plants – 2017
 - ▶ 5% of the total installed capacity
- Grid Code Addendum-II for grid integration of Solar Power Plants - 2014
 - ▶ Grid Code Addendum-II (Revision-1) for grid integration of Solar Power Plants – in process
 - ▶ 5% of the total installed capacity (finalized by GCRP)
- Revision of Grid Code (to be initiated) – as per amended act
- Development of Grid Code for HVDC (being developed)
- Implementation of Grid Code



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● Distribution Code, 2005

- To ensure that the Licensee's networks are **planned, developed, operated**, and **maintained** in an efficient, safe, reliable and coordinated, and economical manner from technical standpoint.
- Distribution Code deals exclusively with technical and operational aspects concerning the distribution and supply of electricity, and the use of the licensee's networks for the transport of electricity.
- Distribution Code Review Panel (DCRP) - 2014
- Development of **Distribution Code Addendas** for integration of small generators at distribution level such as Distributed Generators under Net Metering Regime
- **Implementation** of Distribution Code



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● Distribution Code Review Panel (DCRP)

- All the Licensees shall jointly establish and maintain the Panel and shall:
 - a. keep the Distribution Code and its working under review;
 - b. review all suggestions for amendments to the Distribution Code;**
 - c. publish recommendations to NEPRA for approval;**
 - d. issue guidance on Distribution Code and its implementation;
 - e. resolve disputes between the licensees and its Users;
 - f. study and evaluate suggestions from different parts of the power market;
 - g. consider what changes are necessary to the Distribution Code arising out of unforeseen circumstances.



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● Power Safety Code, 2015

- To achieve the target of zero fatal accidents in the power sector, Power Safety Code was developed for transmission and Distribution Licensees.
- Development of detailed Safety Manual for distribution companies. **Draft has been prepared and is in the process of approval by the Authority.**
- Regular Monitoring of inquiries held, actions taken and compensation given by distribution companies in case of fatal accidents.
- Development & Implementation of Safety Manuals/Codes by all Transmission Licensees

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Part-IV

Monitoring of Performance Standards

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● Monitoring of Performance Standards and Imposition of Fines/Penalties

- To keep the performance of the licensees up to the mark, periodical monitoring is carried out and if found in violation of the performance standards rules, codes and other applicable documents, they are penalized accordingly.
- A total of Rs. **76 million** fine has been imposed on the licensees. Detail of allegations/violations for all the licensees is given hereunder;
- **Generation Licensees**
 - ▶ Excess Auxiliary Consumption
 - ▶ Higher Outages
 - ▶ Underutilization of Power Plants
- **Transmission Licensee(s)**
 - ▶ Voltage Violations
 - ▶ Frequency Violations
 - ▶ Delay in Power Evacuation/Interconnection Schemes



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● Monitoring of Performance Standards and Imposition of Fines/Penalties Contd. . .

● Distribution Licensees

- ▶ Incorrect data of tripping and its duration;
- ▶ Incorrect data of no. of complaints;
- ▶ Delay in restoration of Power Supply (repair of damaged transformer);
- ▶ Voltage beyond limits;
- ▶ Non-implementation of load shedding schedule;
- ▶ Discriminatory Load Shedding;
- ▶ Unannounced Load Shedding in Ramadan;
- ▶ Safety incidents;
- ▶ Underutilization of Investment Funds;
- ▶ Pendency of Ripe Connections;
- ▶ System constraints;



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● Monitoring of Performance Standards and Imposition of Fines/Penalties Contd. . .

● Liquidated Damages (LDs)

Apart from this, a total of Rs. 4.6 billion LDs were imposed by CPPA-G on GENOCs after the initiation of legal proceedings by the Standards Department.



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