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PART II

Statutory Notifications (S.R.O.)

GOVERNMENT OF PAKISTAN

**PAKISTAN ELECTRONIC MEDIA REGULATORY AUTHORITY
(PEMRA)**

NOTIFICATION

Islamabad, the 29th June, 2020

**PEMRA “Standards for Distribution Service Licensees of Guided Media”
Regulations, 2020**

S. R. O.740(I)/2020.—In exercise of the powers conferred under Sub Section (3) of Section 4 read with all other enabling provisions of PEMRA Ordinance 2002 (XIII of 2002), the Pakistan Electronic Media Regulatory Authority (PEMRA) is pleased to make the following Regulations

PART 1

1 Short Title Commencement and Jurisdiction:

- (1) These Regulations shall be called PEMRA “Standards for Distribution Service Licensees of Guided Media” Regulations 2020
- (2) They shall extend to the whole Pakistan.

(1691)

Price: Rs. 20.00

[5752(2020)/Ex. Gaz.]

- (3) They shall come into force at once.
 - (4) These Regulations shall apply to the PEMRA Distribution Media licensees providing services through Guided (Wired) Media.
- 2 Definitions:-**(i) Terms and Expressions used in these Regulations shall have, unless it appears repugnant to the context or provided otherwise, following meaning:
- (a) "All Dielectric Self-Supporting cable (ADSS)", is a fiber optic cable, suitable for use on pole supporting distribution (low voltage) and transmission (high voltage) lines.
 - (b) "Channel" means a portion of electro-magnetic frequency band which is used in a cable system and which is capable of delivering at a minimum standard broadcast television service whether in an analogue/ digital or IP format.
 - (c) "Distribution Service" for the purpose of these Regulations mean a service which receives broadcast and pre-recorded signals from different TV and radio channels and distribute them to subscribers through wired medium and includes Cable TV, IPTV and such other similar technologies.
 - (d) "Distribution Service Licensee" for the purpose of these Regulations, mean any person engaged in the business of distribution service through wired medium including loop holder licensee allowed by the Authority.
 - (e) "Distribution cable" means the cable used by Distribution Service licensee to distribute television signals to the subscribers e.g. Fiber Optic, Coaxial Cable etc.
 - (f) "Distribution companies (DISCOs)" means Electric Power distribution companies operating under licence issued by National Electric Power Regulatory Authority (NEPRA).
 - (g) "Distribution Network" means the infrastructure used for provision of distribution service.
 - (h) "Force Majeure" means an event that is not reasonably foreseeable by the Distribution Service Licensee and is beyond the reasonable control of the Distribution Service Licensee.

- (i) "Heavy Transport Vehicle (HTV)" means vehicles which include bus, truck, trailer truck, crane etc.
- (j) "High Tension (HT)lines" means Electrical Supply lines of 11000 Volts and above.
- (k) "Light Transport Vehicle (LTV)" means vehicles which include motorcycle, motorcar, jeep etc.
- (l) "Loop Holder Licensee" for the purpose of these Regulations mean a person who obtains signals from distribution service licensee and further distributes the same to multiple subscribers without inserting any further programmes or advertisements.
- (m) "Low Tension (LT) lines" means Electrical Supply lines of 400 Volts and below.
- (n) "Main distribution system" means the distribution cable connecting the head-end and the subscriber's tap/Network Access Point(NAP).
- (o) "Network access point (NAP)" means the point in the main optical distribution system from where the subscriber's drop cable is fed.
- (p) "Poles" mean any mast/structure carrying electrical and communication cables.
- (q) "Subscriber drop" means the distribution cable from the subscriber tap/NAP to the TV/ Customer Premises Equipment CPE)/terminal box/ Optical Network Terminal (ONT)
- (r) "Subscriber tap" means the point in the main distribution system from where the subscriber drop cable is fed.

Words and phrases used but not defined in these Regulations, unless the context otherwise requires, shall have the meanings assigned to them in the PEMRA Ordinance 2002 (Amendment Act 2007), and Rules and Regulations made thereunder:

PART 2
Technical Standards

3 Distribution Cable Specifications:

- (1) A Distribution Service licensee shall adopt the following distribution cable specifications for the main distribution system, based on the number of subscriber terminals connected to the distribution cable:

Number of subscriber terminals connected to the distribution cable	Grade/ Type of Distribution cable*
Up to and including 2000	RG-11 / Fiber Optic Cable (In case of aerial networks, ADSS Fiber Optic Cable and in case of underground networks, underground (UG) Fiber Optic Cable)
Above 2000	Fiber Optic Cable (In case of aerial networks, ADSS Fiber Optic Cable and in case of underground networks, underground (UG) Fiber Optic Cable)
*Fiber Optic Cable of minimum G652D (ITU-T) standard or higher shall be used.	

- (2) A Distribution Service licensee shall ensure that the subscriber drop cable is clamped properly to walls, poles etc. using insulators (*i.e.* cables are tied to insulators) to ensure that cables are not in direct contact with walls/poles. Also, cables shall not cause nuisance to the subscriber, public or environment.
- (3) In case of aerial networks, insulators with suitable clamps shall be installed on poles and cables shall be tied to insulators. Route for cables on front side/elevation of buildings shall be properly planned, and cables shall be clamped to walls using suitable insulators/weather protected clamps.
- (4) A Distribution Service licensee shall, to the minimum, adopt the following distribution cable specification for the subscriber drop:

For copper/aluminum cables:

Number of subscribers on the drop	Length of the subscriber's drop without using an amplifier in the drop**	Grade of Distribution cable
1	Up to 30 meters	RG-6
2 to 4	Up to 30 meters	RG-7
1 to 4	30 to 100 meters	RG-11

5 and more	Up to 100 meters	RG-11
**In all other conditions, an amplifier shall be used in the subscriber's drop.		

- (5) A Distribution Service licensee shall preferably adopt the following ADSS cable specifications or equivalent for use in its aerial distribution network involving poles.

Type of cables	Typical Span (m)	Minimum Recommended Sag	Recommended Tensile Strength of the cable (N)
2F ADSS cable round profile drop cable	50	1%	1500
2F ADSS feeding cable	50	1%	1600
8F/48F ADSS cable	50	1.5%	6000
144F ADSS cable	50	1.5%	6000

4. Frequency Band:

- (1) A Distribution Service licensee shall use PAL B/G television system for analog transmission, DVB television system for digital transmission and appropriate streaming protocol for content (video) delivery e.g. IPTV, Mobile TV etc. on its distribution network. The following frequency bands shall be used:

Standard Band	Standard Channel Identification	Frequency (MHz)
VHF (Low)	E2 - E4	48 - 68
VHF (Low)	X, Y, Z	69 - 88
VHF (Mid)	S1 - S10	108 - 174
VHF (High)	E5 - E12	175 - 230
VHF (Super)	S21 - S41	231 - 300
VHF (Hyper)	S21 - S41	303 - 469
VHF (Ultra High)	E21 - E69	471 - 861

The audio center frequency of the audio carrier must be 4.5 to 5.5 MHz above the frequency of visual carrier at the output of the modulating or processing equipment of a system and at the subscriber end of the subscriber's drop.

5. Quality of Service:

- (1) A Distribution Service licensee shall ensure that the signal leakage from its distribution system shall be within the limits specified below:

Frequencies (MHz)	Signal Leakage limit ($\mu\text{V}/\text{meter}$)	Distance (m)
Up to and including 54	15	30
Over 54	20	3

- (2) The carrier-to-noise ratio for each television channel received at subscriber's end of the subscriber's drop shall not be less than 45dB.
- (3) In case of fiber optic network, the licensee shall ensure that the optical power at Optical Network Terminal (ONT) are within the acceptable range specified by the ONT manufacturer. The licensee shall also keep a suitable back-off/margin to cater for fiber cuts and to compensate for degradation of optical components over time.
- (4) A Distribution Service Licensee shall also comply with Quality of Service Standards as per PEMRA (Distribution Service Operations) Regulations, 2011 and defined in their respective Distribution Service Licence Terms and Conditions.

6. System/Equipment Layout and Location:

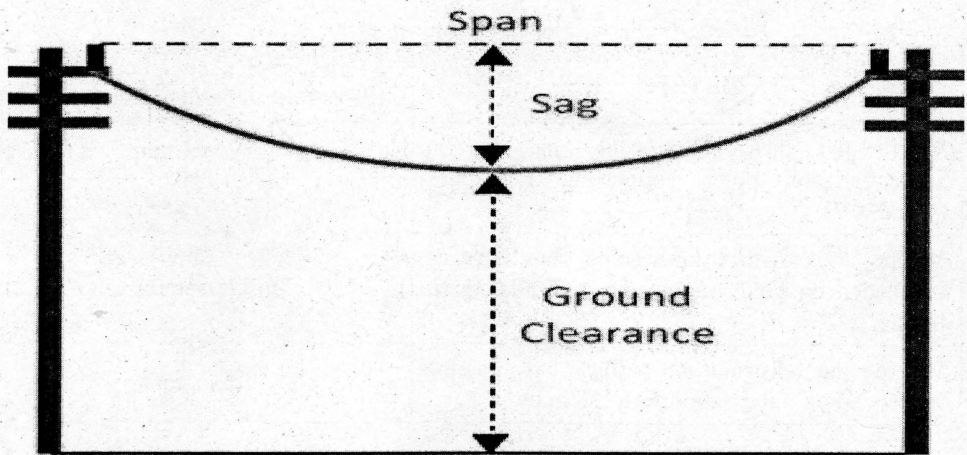
- (1) A Distribution Service licensee shall establish the head-end facilities in an area which is easily accessible to authorized officers of the Authority for inspection purpose, and does not cause nuisance to people living in residential areas. A Distribution Service licensee shall, where applicable, establish its service center/franchise which is easily accessible to its subscribers for provision of services.

Provided that no objection certificate (NOC) has been obtained from all relevant organizations, where required.

- (2) In case where the distribution cable of the network has to be buried in ground, the following specifications shall be complied with:

Area	Standard
In case of public areas, where the distribution cable has to be buried under road, footpaths etc.	Poly Vinyl Chloride (PVC)/ High Density Polyethylene (HDPE)/ Polypropylene Random Copolymer (PPRC) pipes shall be used which shall be buried at least one meter or as per approved burial level of the local authority/administration below the ground level. Road-cuts shall be back-filled as per standards of the local authority/administration.
In all other areas	The distribution cable shall be passed in trenches with bricks on top, and trench is to be back-filled with sand.

- (3) In case where the cable has to be suspended between two or more electricity poles, the Distribution Service licensee shall ensure that the cable is installed at a sufficient height, out of reach of people and vehicles passing under it and that it is properly tied to the insulators installed on poles. Minimum ground clearance is to be measured from the lowest point in sag, as shown below:



In case	Minimum Ground Clearance
Track rails of railroads	5.5 meters
Where vehicles (HTV*** and LTV), people, animal etc. pass under it.	4.3 meters
All other areas	3.4 meters
Spaces or ways subject to pedestrians or restricted traffic	2.8 meters

- (4) The ground clearance of the distribution cable shall at least be as follows:

***HTV is defined as any vehicle exceeding 2.5 meters in height.

Insulators and suitable clamps shall be installed on poles and cables shall be tied to insulators. Also, cable tying method adopted shall be able to withstand the total cable load including cable weight, bird load, wind load etc.

Provided that cable standards mentioned in Part 2 of these regulations are fully complied with.

Provided further that in case of using electricity/telephone/railway poles, disturbance for external sources i.e. electricity, telephone lines etc. do not cause interference in the distribution cable which may result in the inferior quality of service to the subscribers and that all the requirements laid down in Regulations 6(3) & 6(4) are fulfilled. The following clearance between the lines and the distribution cable shall be maintained:

In Case	Minimum clearance between the distribution cable and the lines
Where the distribution cable has to be suspended on poles supporting LT lines (400/220V).	1 meter
Where the distribution cable has to be suspended on poles supporting communication lines.	0.6 meters
Where the distribution cable has to be suspended on poles supporting HT lines	1.5 meters

For ADSS fiber optic cables, following clearance between the lines and cable shall be maintained.

In Case	Minimum clearance between the ADSS cable and the lines
Where the ADSS cable has to be suspended on poles supporting LT lines (400/220V).	0.6 meters
Where the ADSS cable has to be suspended on poles supporting communication lines.	0.3 meters
Where the ADSS cable has to be suspended on poles supporting HT lines	1.5 meters

- (5) A Distribution Service licensee shall ensure that its distribution network does not cause harmful interference or harm to the equipment of subscribers and other systems that may be connected to its system.
- (6) In case of an expansion/construction of the distribution network, the Distribution Service licensee shall ensure that new installation work is undertaken only after obtaining proper permission / NOC from the relevant agencies/ offices in case of digging roads and using other utilities poles etc. Provided that this is not applicable for maintenance of existing network.

7 Scalability of Distribution Service Licensee System:

- (1) A Distribution Service licensee shall install a distribution network which is scalable and can cater for the future load growth of the subscribers, television channels and the technology.

PART 3 Safety Standards

8 Safety:

- (1) A Distribution Service licensee shall take all necessary steps to ensure the safety of its equipment, personal/staff, own building including surrounding buildings and environment. The safety measure shall include the following, but are not limited to:
 - (a) Provision of fire-fighting equipment i.e. fire extinguisher etc.
 - (b) Use of standard quality cables as per PS: IEC60227-4/2007 standards issued by Pakistan Standards and Quality Control Authority (PSQCA) for electricity and distribution network.
- (2) A Distribution Service licensee shall ensure that line isolators are installed at both ends of the main distribution system, to prevent stray electrical charges from getting on to the distribution network and causing danger to the subscriber's equipment and people where applicable. This clause is however, not applicable for optical fiber cables.
- (3) No active equipment (equipment that requires electrical power) shall be installed on poles supporting HT transmission lines.
- (4) There shall be no physical contact between any type of distribution cable and the live/electric wire.
- (5) Activities such as maintenance etc. shall not be carried out on poles supporting transmission lines (HT or LT) during load-shedding or power breakdown for safety reasons.
- (6) A Distribution Service licensee shall also comply/conform to Pakistan Electric and Telecommunication Safety Code (PETSAC-2014) developed by Pakistan Engineering Council (PEC) and duly notified by Ministry of Science and Technology (MOST) GoP, where applicable.
- (7) A Distribution Service licensee shall ensure that its distribution network does not become nuisance to the public and does not pose hazard to

people, animals and the environment, besides the security of the cable itself.

9. Electrical Safety:

- (1) Distribution Service licensee, workers and employees shall take all safety measures, before getting close to live electrical wires and safety equipment which shall include but not limited to use of insulated gloves, helmets and proper kits.
- (2) Distribution Service licensee, workers and employees shall not be allowed to work on poles (HT/LT/Communication) during rain/storm.
- (3) Distribution Service licensee, workers and employees shall use a stable platform for working on aerial network e.g. insulated ladders specially designed for poles (e.g. fiber glass ladders), telescopic boom lifts with non-metallic and non-conducting bucket (e.g. bucket made up of fiber glass, wood etc.). All the relevant field staff shall be given proper training prior to deputing them in field.
- (4) Distribution Service licensee, workers and employees shall test the poles using phase tester before commencement of work on it.
- (5) Distribution Service licensees, workers and employees shall ensure that the aerial network's components (insulators/cables/clamps etc.) are strong enough to withstand wind and storm loads as otherwise it may cause serious threat to life and property
- (6) Distribution Service licensee, workers shall maintain proper distance from live electrical lines while working on electrical poles, with the permission of the DISCOs. The minimum distance maintained shall be as follows:

HT Transmission Lines	LT Transmission Lines
0.9 meters	0.6 meters

10 Optical Fiber Safety:

Distribution Service licensees, workers, involved in fiber optic cable installation or repair shall:

- (a) Switch off laser lights prior to work initiation, where feasible.

- (b) Not intentionally look into the LASER of source, fiber end or point it towards another person.
- (c) Follow other safety standards of working on fiber optic networks.

PART 4

Performance Standards

11 Service Reliability:

- (1) A Distribution Service licensee shall take all necessary steps to avoid interruption of service to its subscribers. These steps include, but are not limited to:
 - (a) Provision of alternate power supply [which may include generators, uninterruptible power supply (UPS), dual power source etc.], 24 hours a day, to its head-end facilities, to cater for main power failure.
 - (b) Presence of a trained operations and maintenance (O&M) personnel, 24 hours a day, in case of any mechanical fault in the head-end facilities.
- (2) In case of unplanned interruption, a Distribution Service licensee shall ensure that the interruption duration, in service to a subscriber, does not exceed 18 hours in a year. In case of interruption in the main distribution network/cable due to vandalism by extraneous agencies, repair shall be carried out promptly.
- (3) In case of planned interruption, *i.e.* system maintenance/upgradation etc., the interruption duration in cable service shall not exceed 24 hours in a year to a subscriber. Provided that a notice is served to all affected subscribers at least 24 hours in advance of such interruption. This excludes any emergency maintenance activities.

PART 5

Miscellaneous

12 Relaxation of the Standards:

On a written request by a Distribution Service licensee, any or all of the above Standards may be relaxed by the Authority or its Authorized officer as deemed appropriate in case of a *force majeure*. In case a

dispute arises whether the condition is a *force majeure* or otherwise, the decision of the Authority shall be final. The written request for relaxing any or all of these Standards must be filed immediately of the occurring of such an event.

13 Revision/amendment/modification of the Standards for Distribution Service Licensees for Guided Media:

The Authority may revise, amend and/or modify these Standards from time to time at an early date as deemed appropriate.

14 Repeal and Validation:

- (1) The Pakistan Electronic Media Regulatory Authority "Standards for Cable TV" Regulations 2003, are hereby repealed.
- (2) All acts done or taken by the PEMRA, before the commencement of these Regulations, shall be deemed to have been validly done or have been taken under "Standards for Cable TV" Regulations 2003, to the extent they are consistent with the provisions of PEMRA Ordinance 2002 (Amendment Act 2007), Rules and Regulations made thereunder.

15 Indemnity:

No suit, prosecution or other legal proceedings shall lie against the Federal Government or any Provincial Government or Local Authority or any other person exercising any power or performing any function under this Ordinance or for anything which is in good faith done or purporting or intended to be done under this Ordinance or any Rules and Regulations made thereunder.

16 Removal of Difficulties:

If any difficulty arises in giving effect to the provisions of these Regulations, the Authority may make such order, not inconsistent with Provisions of these Regulations, as may appear it to be necessary for the purpose of removing the difficulty.

DR.MUKHTAR AHMAD,
DG/Secretary to the Authority.

[PEMRA-1(09)/Secy/Gazette/2020/136.]