

Code Master

For the purpose of Intrastate Boundary Metering
and Energy Audit Project

(Version 1.21)

Framed By

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Change History

Ver	Changes
1.10	Chapter 5 added; Section 2.5 added
1.20	Chapter 1: Section 1.1 Utility Codes (U-Code) Code "CH" for Chandigarh as Utility
	Chapter 1: Section 1.2 Substation Codes (S-Code): (i) New Substation added: 220KV Chajali as CHJLI, 220KV Sandhwan (Kotkapura) as SNDWN and 220KV Sandhaur as SNDHR. (ii) Old Substation code changed: MOGA1 code to MOGAD for 132 KV Moga-2 (also known as Dhaleke) to avoid confusion (iii) Table sorted alphabetically and voltage level separated out and utility code added for easy in identification.
	Chapter 1: Section 1.4 Device Type Codes (DT-Codes): New Device "LT" added to represent Lines with T-Off instead of Normal Line(LN) type. As this is required as these lines will have three ends instead of two ends in case of normal lines.
	Chapter 2: New Section 2.6 added to drive codes for identifying a Transmission lines (with T-Offs)
1.21	Chapter 1: Section 1.2 S-Codes for Mukerian I, II, III & IV and UBDC I, II & III have been separated out from Mukerian I & II and III & IV and UBDC I, II & III. Chapter 5: Overall Data Quality (QQ) table has been corrected Chapter 5: "OL" Code to indicate Source of Data (SS) has been replaced with "OM" & "OE" (also in the prioritize specification following up) for more clarity as specified there in.

Preface

For the purpose of standardizing the identification & the reference to different locations and various devices for the purpose of Boundary Metering and Energy Audit Project (called the Project hence onwards) these codes have been proposed.

To bring in consistency between existing SCADA system at SLDC and the Project, efforts have been made to have one to one between codes been used in both the system and but are suitable modified where ever the Project requirements so specify. Hence forth these codes shall be used for the different purposes & Reports.

However there shall be Code Master to translate between these codes and normal detailed nomenclature which shall be referred to and translated/ mapped to each other, so that external reports for the persons/ operators who are not directly associated with the administration/ programming in the Project, may understand from Common Names of the various elements of data/ devices.

In case of any changes or extension in codes which may be required due to any reason, the same shall be got approved from the office of SLDC(Project) so as to maintain proper control over the codes being used.

Chapter 1
Lists of Codes

1.0 In this chapter the different Codes for use in the Project for referring different items/ elements of the Project are given and described for ready reference. These codes are as follows:

1.1 Utility Codes (U-Code):

These Codes will be referred to as U-Codes and shall be used to identify the utility where the meter under reference is located.

Utility	U-Code
PGCIL Substations	PG
BBMB Substations/ Plants	BB
HP Substations	HP
Haryana Substations	HS
J&K Substations	JK
PSPCL Distribution	PD
PB IPP	PI
PSPCL Generating Plants	PP
PSTCL Substations	PT
Chandigarh	CH

1.2 Substation Codes (S-Code):

These Codes will be referred to as S-Codes and shall be used to identify the substation where the meter under reference is located. These are 5 character codes and devised to be easily understandable. Each code is unique for each substation even when two different substations may be located at one location. Efforts have been made to assign these codes similar to those used in the existing SCADA/ EMS system at Punjab SLDC. Although codes to the all the substation even below 132kV voltage level in Punjab could be assigned, but presently only those substations within and outside Punjab have been assigned where energy meters are installed or may be required to be installed in near future. This list will keep on updating as more and more substations come under the perview.

SubStation Location	Voltage Level	S-Code
Ablawal	220KV	ABLWL
Abohar	132KV	ABOHR
Ajitwal	220KV	AJTWL
Alawalpur	132KV	ALWPR
Algaon	220KV	ALGON
Amloh	220KV	AMLOH
Amritsar (PGCIL)	400KV	AMRIT
Anandpur Sahib (Majara)	132KV	MJARA
ASHP-1 (Ganguwal)	132kV	ASHP1

ASHP-2 (Nakkian)	132kV	ASHP2
Asron	132KV	ASRON
Badal	132KV	BADAL
Badhani Kalan	132KV	BADNI
Badsahpur	220kV	BDSPR
Baghapurana	220KV	BAGHA
Bahadurgarh	220KV	BGARH
Bajakhana	220KV	BAJAK
Ballianwali	66KV	BWALI
Balluana	132KV	BALNA
Banga	132KV	BANGA
Bangan	220KV	BANGN
Banur	220KV	BANUR
Barnala	220KV	BARNL
Barnala (BBMB)	220KV	BARNA
Bassi (HP)	132KV	BASSI
Bassi Pathana	220KV	BPTHN
Batala	132KV	BATLA
BCF (from GNDTP)	66KV	BCF__
Bhairupa (from GNDTP)	66KV	BHRPA
Bhakra (BBMB)	220KV	BHAKR
Bhikhiwind	132KV	BHKWD
Bhogpur	132KV	BHOGP
Bhuchho Mandi	66KV	BHMND
Bilaspur	132KV	BILAS
Botianwala	220KV	BOTIA
Buttari	220KV	BUTRI
C Compound (from GNDTP)	66KV	CCMPD
Cantt (from GNDTP)	132KV	CANTT
Chajali	220KV	CHJLI
Chamkaur Sahib	132KV	CHMKR
Chandigarh (UT)	66KV	CHNDI
Channu	132KV	CHANU
Children Park Jal	132KV	CPJLD
Chogawan	220KV	CGWAN
Chohal	132KV	CHOHL
Chohla Sahib	220KV	CHOLA
Civil Line	220KV	CLASR
Dasuya (of PSTCL)	220KV	DASYA
Dasuya (of PSPCL)	66kv	DSUYA
DCM (from Asron)	132KV	DCM__
Dera Beas	132KV	DBEAS
Derabassi	220KV	DERAB
Devigarh	220KV	DGARH

Dhanaula	220KV	DHNLA
Dhandari Kalan -1	220KV	DHNDR
Dhandari Kalan -2	220KV	DHNDK
Dharamkot	132KV	DHARM
Dhariwal	132KV	DHRWL
Dhilwan	132KV	DHLWN
Dhuri220	220KV	DHURI
Dhuri400	400KV	DHUR4
Dina nagar	66KV	DINGR
Doraha	220KV	DORHA
Ekkal gadda	132KV	EGADA
Faridkot	132KV	FARID
Fatehgarh Churian	220KV	FATEH
Ferozepur	220KV	FIROZ
Ferozepur Rd	220KV	FRLDH
Ferozeshsh	132KV	FSHAH
Focal Point Jal	132KV	FPJLD
G-1 Mandi Gobindgarh	220KV	GOBIO
G-2 Mandi Gobindgarh	220KV	GOBIN
G-3 Mandi Gobindgarh	220KV	GOBI3
G-4 Mandi Gobindgarh	220KV	GOBI4
Ganguwal (BBMB)	220KV	GANGL
Gaunsgarh	220KV	GAUNS
GGSTP	220kv	GGSTP
Ghogra	66Kv	GHGRA
Gholiya Kalan	132KV	GKLAN
GHTP	220kv	GHTP_
Ghubaya	220KV	GUBYA
Ghulal	220KV	GHLAL
Gidderbaha	132KV	GIDER
GNDTP	220kv	GNDTP
Goraya	220KV	GORYA
GT Road	132KV	GTASR
Gujarat Ambuja	132KV	GUJAM
Gurdaspur	132KV	GDSPR
GVK TPP	400KV	GWLTP
Hakima Gate	132KV	HKIMA
Hamirpur (HP)	132KV	HAMIR
Himmatpura	220KV	HIMAT
Hiranagar (JK)	220KV	HRNGR
Hoshiaprur	132KV	HSRPR
Humbran	220KV	HMBRA
IGC Bathinda	132KV	IGC_
Ikolaha	220KV	IKOLA

Jadla	132KV	JADLA
Jagraon	220KV	JGRAO
Jalandhar (BBMB)	220KV	JLNR
Jalandhar (PGCIL)	400KV	JALAN
Jallalabad	132KV	JLBAD
Jamalpur(BBMB)	220KV	JAMAL
Jamsher	220KV	JMSHR
Jandiala	132KV	JNDLA
Jessore (HP)	220KV	JASOR
Jhunir	220KV	JHUNR
Kahanpur	132KV	KHNPR
kakrala	220KV	KAKRL
Kangra	132KV	KANGR
Kangra (HP)	132KV	KNGRA
Kanjli (Kapurthala)	220KV	KANJL
Kapurthala	132KV	KTHLA
Kartarpur	220KV	KARTA
Kathu Nangal	132KV	KATHU
Kathua (JK)	66KV	KTHUA
Katorewala	220KV	MLOT2
Khanna Paper Mill (Amritsar)	132KV	KPMIL
Kharar	220KV	KHRAR
Khasa	220KV	KHASA
Khera Mandir	132KV	KHERA
Kishanpur(PGCIL)	220KV	KISHN
Kohara	220KV	KOHRA
Kotkapura-1	132KV	KKPRA
Kotkapura-2	132KV	KKPR1
Kotkaror / Talwandi Bhai	220KV	KOTKR
Kotla (BBMB)	132KV	KOTLA
Kotla Janga	220KV	KJNGA
Kotli Surat Malhi	220KV	KSMAL
Lalru	220KV	LALRU
Lalton Kalan	220KV	LALTN
Lehra Mohabbat	66KV	LMOHB
Ludhiana (PGCIL)	400KV	LDINA
Mahilpur	220KV	MHLPR
Majitha	220KV	MJTHA
Makhu (Mastewala)	400KV	MAKHU
Malerkotla	220KV	MALER
Malerkotla (PGCIL)	400KV	MLERK
Mall Mandi	132KV	MALLM
Malout	132KV	MALOT
Malout	66Kv	MLOUT

Mamoon	132KV	MMOON
Mandi (Bijni) (HP)	33KV	MNDIB
Mandi (HP)	66KV	MANDI
Manna Singh	132KV	MSWLA
Mansa	220KV	MNSA2
Mansa Refinery	220KV	MNSRN
Mastewal	220KV	MASTE
Maur	132KV	MAUR_
Max India	132KV	MAXIN
Mehalkalan	220KV	MEHAL
MES	66KV	MES__
Moga	220KV	MOGAN
Moga (PGCIL)	400KV	MOGA_
Moga-1	132KV	MOGAO
Moga-2/ Dhaleka	132KV	MOGAD
Mohali-I	220KV	MOHLI
Mohali-li	220KV	MOHL2
Mukerian	66Kv	MKRAN
Mukerian-1	132kv	MUK1_
Mukerian-2	132kv	MUK2_
Mukerian-3	132kv	MUK3_
Mukerian-4	132kv	MUK4_
Muktsar	132KV	MKTS1
Muktsar	220KV	MKTS2
Muktsar	400KV	MKTS4
Nabha	220KV	NABHA
Nakkian	132KV	NKIAN
Nakodar	132KV	NKDAR
Nakodar	400KV	NKDR4
Nalagarh (PGCIL)	400KV	NALAG
Nangal	66KV	NANGL
Naraingarh	132KV	NRAIN
Narot Jamil Singh	66KV	NJSNG
Nathana	66KV	NTHAN
Nawanshahr	132KV	NWNSH
NFL	132KV	NFL__
Nurmahal	132KV	NURML
Nurpurbedi	33KV	NURPB
PACL	66KV	PACL_
Pakherpura/ Jyantipur	132KV	PKHAR
Pakhowal	220KV	PAKHO
Panj Grai	132KV	TPANJ
Paper Mill	66KV	PMILL
Passiana	220KV	PSINA

Pathankot	132KV	PTHNK
Patiala (PGCIL)	400KV	PATIA
Patran	220KV	PATRA
Patti	220KV	PATTI
Phagwara	132KV	PHGWR
Phillaur	132KV	PHILR
Phul	66KV	PHUL_
Pims Jal	132KV	PIMSJ
Pinjore (HVPNL)	132KV	PNJOR
Pong (BBMB)	220KV	PONG_
Power Colony	132KV	POWER
Railway	132KV	RLWAY
Railway	220KV	RLWA2
Raishana	220KV	RSHNA
Rajla	220KV	RAJLA
Rajpura	400KV	RJPR4
Rajpura	220KV	RAJPR
Rajpura TPP	400KV	RJPTS
Rampura	66KV	RMPRA
Ranbaxy	132KV	RNBXY
RCF	132Kv	RCF__
Rehana Jattana	220KV	RJATA
Ropar	132KV	ROPAR
RSD	220KV	RSDPH
RSD	66KV	RSDPP
Sadiq	220KV	SADQ2
Sahnewal	220KV	SAHNE
Sakatri Bagh	132KV	SBAGH
Samadhbhai	132KV	SMADH
Sandhaur	220KV	SNDHR
Sandhwan (Kotkapura)	220KV	SNDWN
Sangrur (BBMB)	220KV	SNGRU
Sarainaga	132KV	SARAI
Sarna	220KV	SARNA
Science City	132KV	SCJLD
Seh	132KV	SEH__
Shamshpur	132KV	SAMAS
Shanan (Joginder Nagar)	132kV	JOGIN
Shri Hargobind Pur	132KV	SHHPR
Sihora	132KV	SIHOR
Sosan	132KV	SOSAN
Sujanpur	66KV	SJNPR
Sultanpur	220KV	SULTN
Sunam	220KV	SUNAM

Swadi Kalan	132KV	SWADI
Talwandi Sabo	220kV	TLWND
Talwandi Sabo TPP	400KV	TLDTP
Talwara	66KV	TLWR_
Tanda	132KV	TANDA
Tangra	132KV	TNGRA
TarnTaran	132KV	TTARN
Tibber	220KV	TIBER
UBDC -I	132kV	UBDC1
UBDC - II	132kV	UBDC2
UBDC- III	132kV	UBDC3
Udhampur (JK)	220KV	UDHAM
Udhoke	220KV	UDOKE
Urban Estate Jal	132KV	UEJLD
Verka	132KV	VERKA
Verpal	220KV	VERPL
Wadala Granthian	220KV	WDALA

1.3 Voltage Codes (V-Codes):

These Codes will be referred to as V-Codes and shall be used to identify the different voltage levels instead of using numeric figures and are same as the codes used in existing SCADA/ EMS system at Punjab SLDC.

Voltages	V-Codes
400kV	F
220kV	E
132kV	D
66kV	C
33kV	B
11kV	A

1.4 Device Type Codes (DT-Codes):

These Codes will be referred to as DT-Codes and shall be used to identify the different devices i.e. Transmission Line, Transformers, Generating Units, Generator Transformer, etc. where the energy meter may be installed

Device	DT-Code
Line	LN
Line (with T-Off)	LT
Transformer	XF
Unit	UT
Station Transformer	ST
Generator-Transformer	GT

Capacitor Bank	CB
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1.5 Transformer Voltage Ratio Codes (TVR-Codes)

These Codes will be referred to as TVR-Codes and shall be used to identify the different voltage ration levels of transformers instead of using numeric figures and are similar to the codes used in existing SCADA/ EMS system at Punjab SLDC. There shall be no gap, space, “/”, etc between various characters of the code. For coding purpose Voltage ratios have been coded using V-Codes without “/”.

T/F Voltage Ratio	TVR-Code
400/220	FE
220/132	ED
220/66	EC
132/66	DC
132/33	DB
132/11	DA
132/33/11	DBA
132/66/11	DCA

1.6 Transformer Name Codes (TN-Codes):

These Codes will be referred to as TN-Codes and shall be used to identify the different transformers at a particular substation. There shall be no gap, space, “/”, etc between various characters of the code. Transformer represented as T1 or T-1, T 1, ICT-1, ICT 1 or any other variation at respective substation shall be represented as T1 only.

Local Substation Level Transformer Name	TN-Code
T 1 or ICT-1	T1
T 2	T2
T 3	T3
T 4	T4
T 5	T5
T 6	T6
T 7	T7
T 8	T8
T 9	T9
T 10	T10
T 11	T11
T 12	T12
T 13	T13
T 14	T14
T 15	T15

However Generator Transformers (i.e. GT-1, GT-2, etc) shall be mentioned as GT1, GT2, etc. respectively . Further Station Transformers (STs) shall be mentioned as ST1, ST2, etc.

1.7 Transformer Winding Codes (TW-Codes):

These Codes will be referred to as TW-Codes and shall be used to identify the different windings of a transformers being referred to e.g. HV, LV, Tertiary, 440kV side, 220kV side, 66kV side, etc.. The winding shall be identified by the voltage level of that winding. For example HV side of 220/66 kV T-5 transformer shall be identified as “E” winding, because here the HV side is 220kV and V-Code of 220kV is “E”.

TW-Codes
F
E
D
C
B
A

1.8 Transmission Line Circuit Number Codes (TC-Codes):

These Codes will be referred to as TC-Codes and shall be used to identify the different circuits of a multi circuit transmission line between two substations. Single circuit line may not have any suffix. In case of multi circuit line these individual circuit number shall be suffixed to the line name.

Line Circuit No	TC-Code
Circuit No1	1
Circuit No2	2
Circuit No3	3
Circuit No4	4
Circuit No5	5
Circuit No6	6
Circuit No7	7
Circuit No8	8

1.9 Some Miscellaneous Codes:

Some Miscellaneous by relevant codes to be used in the Project are also defined here for bringing in consistency.

Meter Type (MT-Code)

Meter Type	MT-Code
ABT type energy Meter	ABT
CEM type energy meter	CEM
ECEM type energy meter	EEM
SEM type energy meter installed by PGCIL for interstate metering.	SEM

Meter Purpose (MP-Code)

Meter Purpose	MP-Code
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Main	M
Check	C
Standby	S
Loss	L

Note: SEM meters installed by PGCIL for the purpose of interstate boundary metering purpose are also identified by them as Main, Check, Standby and Loss Calculation meters. To avoid any confusion while referring Interstate meters of PGCIL and Intrastate meters being installed by PSTCL/ SLDC a suffix C (for PGCIL/ CTU) and S (for SLDC/ STU) shall be used and as such MP-Codes for Intrastate & Interstate shall be as follow:

Meter Purpose (Intrastate)	MP-Code
Main Meters of SLDC/ STU	MS
Check of SLDC/ STU	CS
Standby of SLDC/ STU	SS
Loss of SLDC/ STU	LS

Meter Purpose (Interstate)	MP-Code
Main Meters of PGCIL/ CTU	MC
Check Meters of PGCIL/ CTU	CC
Standby Meters of PGCIL/ CTU	SC
Loss Meters of PGCIL/ CTU	LC

Meter Rating (MR-Code)

Meter Rating	MR-Code
1 Amp Meter	A1
5 Amp Meter	A5

Interface Type (I-Codes)

Only following types of Interfaces and their codes shall be used.

Interface Type	I-Code
Outside with PSTCL	I-T
Outside with Punjab Generators	I-G
Outside with PSPCL Distribution	I-D
Outside with Outside	I-I
Punjab Generating Plants with PSTCL	G-T
Punjab Generating Plants with PSPCL Distribution	G-D
Punjab Generating Plants with Punjab Generating Plants	G-G
PSTCL with PSPCL Distribution	T-D

PSTCL with PSTCL	T-T
PSPCL Distribution with PSPCL Distribution	D-D

Chapter 2 Device Codes

2.0 The Codes for use in the Project for referring different items/ elements of the Project have been given and described in details for ready reference in Chapter 1. In this chapter assembling/ combining these elemental codes to drive higher level codes (D-Codes) for devices is described.

2.1 Codes for identifying a Power & ICT Transformers:

There are various types of transformers, i.e. Power Transformer, ICTs, etc. are under the consideration of this Project. The representation of a these transformers shall be <V-Code of all the windings> _ < TN-Code of the Transformer> _ < TW-Code of the transformer>. How to represent these through a code is described below with examples, except Generator-Transformers (GTs) and Station Transformers (STs) which are described separately:

Local Substation level Transformer Name	Dissected Transformer Name			Coding of Dissected parts of the transformer			Assembled D-Code
	Voltage Rating	Local Name	Windin g Side	V-Code	TN-Code	TW-Code	
400/ 220kV ICT-1 or T-1 (HV side)	400/ 220	ICT-1 or T-1	HV Side	FE	T1	F	FE_T1_F
400/ 220kV ICT-1 or T-1 (LV Side)	400/ 220	ICT-1 or T-1	LV Side	FE	T1	E	FE_T1_E
400/ 220kV ICT-1 or T-1 (220Kv Side)	400/ 220	ICT-1 or T-1	LV Side	FE	T1	E	FE_T1_E
220/132 kV T1 (HV)	220/ 132	T1	HV Side	ED	T1	E	ED_T1_E
220/132 kV T1 (LV)	220/ 132	T1	LV Side	ED	T1	E	ED_T1_D
220/132 kV T3 (LV)	220/ 132	T3	LV Side	ED	T3	E	ED_T3_D
220/66 kV T1 (HV)	220/ 66	T1	HV Side	EC	T1	E	EC_T1_E
220/66 kV T2 (LV)	220/ 66	T2	LV Side	EC	T2	E	EC_T2_C
132/11 KV T-4 (HV)	132/11	T-4	HV	DA	T4	D	DA_T4_D
132/ 66/ 11KV T-6 (HV)	132/66 /11	T-6	HV	DBA	T6	D	DBA_T6_D
132/ 66/ 11KV T-6 (66kV side)	132/66 /11	T-6	66kV side	DBA	T6	C	DBA_T6_C
132/ 66/ 11KV T-6 (11kV side)	132/66 /11	T-6	11kV side	DBA	T6	A	DBA_T6_A

Note: All the ICT shall be identified with T only e.g. ICT-1 as T1, ICT3 as T3 and so on.

2.2 Codes for identifying a Generator Transformers:

There are Standby meters to be installed on the HV side of Generator Transforms (GTs). The representation of a these transformers shall be <V-Code of all the windings> _ < GT-Code of the Generator Transformer> _ < TW-Code of the transformer>. Being a generating source these are represented differently from normal transformers as described below through examples:

Generator Transformer Name	Dissected Transformer Name			Coding of Dissected parts of the transformer			Assembled D-Code
	Voltage Rating	Local Name	Winding Side	V-Code	TN-Code	TW-Code	
HV side 400/ 11kV GT-1 at Rajpura Thermal Plant	400/ 11	GT1	HV Side	FA	GT1	F	FA_GT1_F
400/ 11kV GT-3 of TSPL Thermal Plant (HV not mentioned side)	400/ 11	GT3	Not Mentioned	FA	GT3	F	FA_GT3_F
220/11 GT-1 at GGSSTP (HV)	220/ 11	GT1	HV Side	EA	GT1	E	EA_GT1_E
132/11 GT-1 at GNDTP	132/ 11	GT1	Not mentioned	DA	GT1	D	DA_GT1_D
GT 3 & GT 4 at Shanan	132/11	GT 3 & GT4	Not mentioned	DA	GT34	D	DA_GT34_D

Note: For the purpose of all the Generator Transformers (GTs) at any plant, the LV side is assumed to be 11kV although these may be at different voltage rating. As and when data shall be available the same may be corrected.

2.3 Codes for identifying a Station Transformers at Generating Plant:

There are Standby meters to be installed on the HV side of Station Transforms (STs) at all the Generating Power Plants. The representation of these transformers shall be <V-Code of all the windings> _ < ST-Code of the Station Transformer at the Plant> _ < TW-Code of the transformer>.These are represented differently from normal transformers as described below through examples:

Station Transformer Name of a Plant	Dissected Transformer Name			Coding of Dissected parts of the transformer			Assembled D- Code
	Voltage Rating	Local Name	Winding Side	V-Code	TN-Code	TW-Code	
HV side 400/ 11kV ST-1 at Rajpura Thermal Plant	400/ 11	ST-1	HV Side	FA	ST1	F	FA_ST1_F
400/ 11kV ST-2 of TSPL Thermal Plant (HV not mentioned side)	400/ 11	ST-2	Not Mentioned	FA	ST2	F	FA_ST2_F
220/11 ST-1 at	220/ 11	ST-1	HV Side	EA	ST1	E	EA_ST1_E

GGSTP (HV)							
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Note: For the purpose of all the Station Transformers (STs) at any generating plant, the LV side is assumed to be 11kV although these may be at different voltage rating. As and when data shall be available the same may be corrected.

2.4 Codes for identifying a Transmission lines:

The representation of a transmission line shall be <V-Code> + < S-Code of one Substation> + < S-Code of second Substation>, and the S-Codes of both end substations shall be mentioned alphabetically. Coding of few Transmission Line is shown below with examples for understanding:

Transmission Line	Dissected Transmission Line Name		Coding of Dissected parts of the Transmission Line			Assembled D-Code	Remarks
	Voltage Rating	Far End	V-Code of Line	S-Code of One End of Line	S-Code of Second end of line		
220kV Laltonkalan line at Malerkotla substation	220kV	Laltonkalan	E	LALTN	MALER	E_LALTN_MALER	Looking from both ends the Code is same because it is a same one device. (For consistency S-Codes of both line ends are mentioned alphabetically)
220kV Malerkotla line at Laltonkalan substation	220kV	Malerkotla	E	LALTN	MALER	E_LALTN_MALER	
220kV Laltonkalan line at Jagraon substation Circuit 1	220kV	Laltonkalan	E	JGRAO	LALTN	E_JGRAO_LALTN1	In case of multi circuit line Suffixes 1, 2, 3 etc may be used. In case of single circuit no suffix may be mentioned. Also Near End, Far End substations codes (S-Codes) have to be in alphabetically order always.
220kV Jagraon line at Laltonkalan substation Circuit 1	220kV	Jagraon	E	JGRAO	LALTN	E_JGRAO_LALTN1	
220kV Laltonkalan line at Jagraon substation Circuit 2	220kV	Laltonkalan	E	JGRAO	LALTN	E_JGRAO_LALTN2	
220kV Jagraon line at Laltonkalan substation Circuit 2	220kV	Jagraon	E	JGRAO	LALTN	E_JGRAO_LALTN2	

2.5 Codes for identifying a Capacitor Banks:

The representation of these Capacitor Banks shall be <V-Code of Capacitor Bank> _ < TN-Code of the Capacitor Bank> as described below through examples:

Capacitor Bank	Dissected Transformer Name		Coding of Dissected parts of the transformer		Assembled D- Code
	Voltage Rating	Local Name	V-Code	TN-Code	
Capacitor Bank No 1	220	CB-1	E	CB1	E_CB1
Capacitor Bank No 2	220	CB-2	E	CB2	E_CB2
Capacitor Bank (Only single one)	220	CB	E	CB	E_CB
Capacitor Bank No 1	132	CB1	E	CB1	D_CB1
Capacitor Bank No 1	132	CB2	E	CB2	D_CB2

2.6 Codes for identifying a Transmission lines (with T-Offs)

The representation of a transmission line (with T-Offs) shall be <V-Code> + < S-Code of one Substation> + < S-Code of second Substation> + , < S-Code of third Substation> and the S-Codes of these end substations shall be mentioned alphabetically. Coding of few Transmission Line is shown below with examples for understanding:

Transmission Line	Dissected Transmission Line Name		Coding of Dissected parts of the Transmission Line				Assembled D-Code	Remarks
	Voltage Rating	All Ends	V-Code of Line	S-Code of One End of Line	S-Code of Second end of line	S-Code of Third end of line		
132kV ASHP2 line at 132kV ROPAR and T-Off at 132kV NKIAN substation	132kV	ASHP2 ROPAR NKIAN	D	ASHP2	ROPAR	NKIAN	D_ASHP2_ROPAR_NKIAN	Looking from all ends the Code is same because it is a same one device. (For consistency S-Codes of all line ends are mentioned alphabetically)
132kV Moga(old) at 220kV Moga and T-Off at 132kV Badnikalan	132kV	MOGAO MOGAN BADNI	E	LALTN	MALER		D_BADNI_MOGAN_MOGAO	

Chapter 3
Unique Meter Locations Codes (L-Codes)

3.0 Having assigned the uniform codes to different items & elements in chapter 1 and codes to different types of devices, now this chapter describes how to identify and give it a unique Location code (L-Code) based upon these codes. The necessary format for identifying the location uniquely shall be

<U-Code of Utility> . <V-Code of the Substation> . <S-Code of the Substation> . <DT-Code of the Device type>.<D-Code of the Device Where meter is installed>

Further information regarding the energy meter can be added by freezing the codes of the piece of information under consideration, identifying/ freezing the sequence and then separating the code by period (“.”)

To illustrate the derivation of location codes following examples may be referred:

Utility	Station Name	Feeder Name	L-Code
BBMB	220 kV Ganguwal	33 kV Nurpurbedi	BB.E.GANGL.LN.B_GANGL_NURPB
BBMB	220 kV Barnala	220 kV Barnala (PSTCL)	BB.E.BARNA.LN.E_BARNA_BARNL
BBMB	220 kV Bhakra Left	66 kV PACL	BB.E.BHAKR.LN.C_BHAKR_PACL
BBMB	220 kV Jalandhar	220 kV Butari	BB.E.JLNDR.LN.E_BUTRI_JLNDR
BBMB	220 kV Jalandhar	220/132 kV T1 (HV)	BB.E.JLNDR.XF.ED_T1_E
BBMB	220 kV Jalandhar	220/132 kV T2 (HV)	BB.E.JLNDR.XF.ED_T2_E
BBMB	220 kV Jalandhar	220/132 kV T3 (HV)	BB.E.JLNDR.XF.ED_T3_E
BBMB	220 kV Jalandhar	220/132 kV T4 (HV)	BB.E.JLNDR.XF.ED_T4_E
BBMB	220 kV Jalandhar	220/66 kV T1 (HV)	BB.E.JLNDR.XF.EC_T1_E
BBMB	220 kV Jalandhar	220/66 kV T2 (HV)	BB.E.JLNDR.XF.EC_T2_E
BBMB	220 kV Jamalpur	220 kV Dhandari Ckt-1	BB.E.JAMAL.LN.E_DHNDR_JAMAL1
BBMB	220 kV Jamalpur	220 kV Dhandari Ckt-2	BB.E.JAMAL.LN.E_DHNDR_JAMAL2
BBMB	220 kV Jamalpur	220/132 kV T1 (HV)	BB.E.JAMAL.XF.ED_T1_E
BBMB	220 kV Jamalpur	220/132 kV T2 (HV)	BB.E.JAMAL.XF.ED_T2_E
BBMB	220 kV Jamalpur	220/132 kV T3 (HV)	BB.E.JAMAL.XF.ED_T3_E
BBMB	220 kV Jamalpur	220/66 kV T1 (HV)	BB.E.JAMAL.XF.EC_T1_E
BBMB	220 kV Jamalpur	220/66 kV T2 (HV)	BB.E.JAMAL.XF.EC_T2_E
BBMB	220 kV Jamalpur	220/66 kV T3 (HV)	BB.E.JAMAL.XF.EC_T3_E
BBMB	220 kV Pong	66 kV Talwara	BB.E.PONG_.LN.C_PONG__TLWR_
BBMB	220 kV Sangrur	220/66 kV T1 (HV)	BB.E.SNGRU.XF.EC_T1_E
BBMB	220 kV Sangrur	220/66 kV T2 (HV)	BB.E.SNGRU.XF.EC_T2_E
BBMB	220 kV Sangrur	220/66 kV T3 (HV)	BB.E.SNGRU.XF.EC_T3_E
HP	220 kV Jassur	220 kV RSD Feeder	HP.E.JASOR.LN.E_JASOR_RSDPH
IPP	220 kV GVK Power	Amritsar I/Botianwala Ckt-1	PI.F.GWLTP.LN.E_BOTIA_GWLTP1
IPP	220 kV GVK Power	Amritsar I/Botianwala Ckt-1	PI.F.GWLTP.LN.E_BOTIA_GWLTP1
IPP	220 kV GVK Power	Amritsar II/Botianwala Ckt-2	PI.F.GWLTP.LN.E_BOTIA_GWLTP2
IPP	220 kV GVK Power	Amritsar II/Botianwala Ckt-2	PI.F.GWLTP.LN.E_BOTIA_GWLTP2
IPP	220 kV GVK Power	Ferozpur I/Chohal Ckt-1	PI.F.GWLTP.LN.E_CHOHL_GWLTP1
IPP	220 kV GVK Power	Ferozpur I/Chohal Ckt-1	PI.F.GWLTP.LN.E_CHOHL_GWLTP1

IPP	220 kV GVK Power	Ferozpur II/Chohal Ckt-2	PI.F.GWLTP.LN.E_CHOHL_GWLTP2
IPP	220 kV GVK Power	Ferozpur II/Chohal Ckt-2	PI.F.GWLTP.LN.E_CHOHL_GWLTP2
IPP	220 kV GVK Power	GT1	PI.F.GWLTP.GT.EA_GT1_E
IPP	220 kV GVK Power	GT2	PI.F.GWLTP.GT.EA_GT2_E
IPP	220 kV GVK Power	Kapurthala I/Sultanpur Lodi-1	PI.F.GWLTP.LN.E_GWLTP_SULTN1
IPP	220 kV GVK Power	Kapurthala I/Sultanpur Lodi-1	PI.F.GWLTP.LN.E_GWLTP_SULTN1
IPP	220 kV GVK Power	kapurthala II/Sultanpur Lodi-2	PI.F.GWLTP.LN.E_GWLTP_SULTN2
IPP	220 kV GVK Power	kapurthala II/Sultanpur Lodi-2	PI.F.GWLTP.LN.E_GWLTP_SULTN2
IPP	220 kV GVK Power	ST1	PI.F.GWLTP.ST.EA_ST1_E
IPP	220 kV GVK Power	ST2	PI.F.GWLTP.ST.EA_ST2_E
IPP	400 kV Rajpura Thermal Plant	Dhuri 1	PI.F.RJPTS.LN.F_DHUR4_RJPTS1
IPP	400 kV Rajpura Thermal Plant	Dhuri 2	PI.F.RJPTS.LN.F_DHUR4_RJPTS2
IPP	400 kV Rajpura Thermal Plant	GT1	PI.F.RJPTS.GT.FA_GT1_F
IPP	400 kV Rajpura Thermal Plant	GT2	PI.F.RJPTS.GT.FA_GT2_F
IPP	400 kV Rajpura Thermal Plant	Nakodar 1	PI.F.RJPTS.LN.F_NKDR4_RJPTS1
IPP	400 kV Rajpura Thermal Plant	Nakodar 2	PI.F.RJPTS.LN.F_NKDR4_RJPTS2
IPP	400 kV Rajpura Thermal Plant	ST1	PI.F.RJPTS.ST.FA_ST1_F
IPP	400 kV Rajpura Thermal Plant	ST2	PI.F.RJPTS.ST.FA_ST2_F
IPP	400 kV Talwandi Sabo	400 kV Dhuri CKT I	PI.F.TLDTP.LN.F_DHUR4_TLDTP1
IPP	400 kV Talwandi Sabo	400 kV Dhuri CKT I	PI.F.TLDTP.LN.F_DHUR4_TLDTP2
IPP	400 kV Talwandi Sabo	400 kV Dhuri CKT II	PI.F.TLDTP.LN.F_DHUR4_TLDTP3
IPP	400 kV Talwandi Sabo	400 kV Dhuri CKT II	PI.F.TLDTP.LN.F_DHUR4_TLDTP4
IPP	400 kV Talwandi Sabo	GT1	PI.F.TLDTP.GT.FA_GT1_F
IPP	400 kV Talwandi Sabo	GT2	PI.F.TLDTP.GT.FA_GT2_F
IPP	400 kV Talwandi Sabo	GT3	PI.F.TLDTP.GT.FA_GT3_F
IPP	400 kV Talwandi Sabo	400 kV Moga CKT I	PI.F.TLDTP.LN.F_MOGA_TLDTP1
IPP	400 kV Talwandi Sabo	400 kV Moga CKT I	PI.F.TLDTP.LN.F_MOGA_TLDTP1
IPP	400 kV Talwandi Sabo	400 kV Moga CKT II	PI.F.TLDTP.LN.F_MOGA_TLDTP2
IPP	400 kV Talwandi Sabo	400 kV Moga CKT II	PI.F.TLDTP.LN.F_MOGA_TLDTP2
IPP	400 kV Talwandi Sabo	400 kV Mukstar CKT I	PI.F.TLDTP.LN.F_MUK4_TLDTP1
IPP	400 kV Talwandi Sabo	400 kV Mukstar CKT I	PI.F.TLDTP.LN.F_MUK4_TLDTP1
IPP	400 kV Talwandi Sabo	400 kV Mukstar CKT II	PI.F.TLDTP.LN.F_MUK4_TLDTP2
IPP	400 kV Talwandi Sabo	400 kV Mukstar CKT II	PI.F.TLDTP.LN.F_MUK4_TLDTP2
IPP	400 kV Talwandi Sabo	ST1	PI.F.TLDTP.ST.FA_ST1_F
IPP	400 kV Talwandi Sabo	ST2	PI.F.TLDTP.ST.FA_ST2_F
PGCIL	400 kV Amritsar	T3 400/220 kV (HV)	PG.F.AMRIT.XF.FE_T3_F
PGCIL	400 kV Amritsar	T1 400/220 kV (HV)	PG.F.AMRIT.XF.FE_T1_F
PGCIL	400 kV Amritsar	T2 400/220 kV (HV)	PG.F.AMRIT.XF.FE_T2_F
PGCIL	400 kV Amritsar	400 kV Makhu I	PG.F.AMRIT.LN.F_AMRIT_MAKHU1
PGCIL	400 kV Amritsar	400 kV Makhu II	PG.F.AMRIT.LN.F_AMRIT_MAKHU2
PGCIL	400 kV Jalandhar	220 kV Kapurthala-1 (Kanjli)	PG.F.JALAN.LN.E_JALAN_KANJL1
PGCIL	400 kV Jalandhar	220 kV Kapurthala-2 (Kanjli)	PG.F.JALAN.LN.E_JALAN_KANJL2
PGCIL	400 kV Jalandhar	220 kV Kartarpur	PG.F.JALAN.LN.E_JALAN_KARTA
PGCIL	400 kV Jalandhar	220 kV Nakodar	PG.F.JALAN.LN.E_JALAN_NKDAR
PGCIL	400 kV Ludhiana	T1 400/220 kV (HV)	PG.F.LDINA.XF.FE_T1_F
PGCIL	400 kV Ludhiana	T2 400/220 kV (HV)	PG.F.LDINA.XF.FE_T2_F
PGCIL	400 kV Ludhiana	T3 400/220 kV (HV)	PG.F.LDINA.XF.FE_T3_F
PGCIL	400 kV Ludhiana	T4 400/220 kV (HV)	PG.F.LDINA.XF.FE_T4_F
PGCIL	400 kV Malerkotla	T1 400/220 kV (HV)	PG.F.MLERK.XF.FE_T1_F
PGCIL	400 kV Malerkotla	T2 400/220 kV (HV)	PG.F.MLERK.XF.FE_T2_F
PGCIL	400 kV Malerkotla	T3 400/220 kV (HV)	PG.F.MLERK.XF.FE_T3_F

PGCIL	400 kV Moga	T1 400/220 kV (HV)	PG.F.MOGA_.XF.FE_T1_F
PGCIL	400 kV Moga	T2 400/220 kV (HV)	PG.F.MOGA_.XF.FE_T2_F
PGCIL	400 kV Moga	T3 400/220 kV (HV)	PG.F.MOGA_.XF.FE_T3_F
PGCIL	400 kV Moga	T4 400/220 kV (HV)	PG.F.MOGA_.XF.FE_T4_F
PGCIL	400 kV Moga	400 kV Nakodar I	PG.F.MOGA_.LN.F_MOGA_NKDR41
PGCIL	400 kV Moga	400 kV Talwandi Sabo	PG.F.MOGA_.LN.F_MOGA_TLDTP
PGCIL	400 kV Nalagarh	220 kV Mohali Ckt-1	PG.F.NALAG.LN.E_MOHLI_NALAG1
PGCIL	400 kV Nalagarh	220 kV Mohali Ckt-2	PG.F.NALAG.LN.E_MOHLI_NALAG2
PGCIL	400 kV Patiala	T1 400/220 kV (HV)	PG.F.PATIA.XF.FE_T1_F
PGCIL	400 kV Patiala	T2 400/220 kV (HV)	PG.F.PATIA.XF.FE_T2_F
PGCIL	400 kV Patiala	T3 400/220 kV (HV)	PG.F.PATIA.XF.FE_T3_F
PSPCL	132kV Shanan HEP	GT12	PP.D.JOGIN.GT.DA_GT12_D
PSPCL	132kV Shanan HEP	GT34	PP.D.JOGIN.GT.DA_GT34_D
PSPCL	132kV Shanan HEP	GT5	PP.D.JOGIN.GT.DA_GT5_D
PSPCL	132kV Shanan HEP	132 kV Bassi-1	PP.D.JOGIN.LN.D_BASSI_JOGIN1
PSPCL	132kV Shanan HEP	132 kV Bassi-2	PP.D.JOGIN.LN.D_BASSI_JOGIN2
PSPCL	132kV Shanan HEP	33 kV Bijni (Mandi)	PP.D.JOGIN.LN.B_JOGIN_MNDIB
PSPCL	132kV Shanan HEP	132 kV Kangra-1	PP.D.JOGIN.LN.D_JOGIN_KANGR1
PSPCL	132kV Shanan HEP	132 kV Kangra-1	PP.D.JOGIN.LN.D_JOGIN_KANGR1
PSPCL	132kV Shanan HEP	132 kV Kangra-2	PP.D.JOGIN.LN.D_JOGIN_KANGR2
PSPCL	132kV Shanan HEP	132 kV Kangra-2	PP.D.JOGIN.LN.D_JOGIN_KANGR2
PSPCL	132kV Shanan HEP	66 kV Mandi	PP.D.JOGIN.LN.D_JOGIN_MANDI
PSPCL	220 kV Ranjit Sagar HEP	GT1	PP.E.RSDPH.GT.EA_GT1_E
PSPCL	220 kV Ranjit Sagar HEP	GT2	PP.E.RSDPH.GT.EA_GT2_E
PSPCL	220 kV Ranjit Sagar HEP	GT3	PP.E.RSDPH.GT.EA_GT3_E
PSPCL	220 kV Ranjit Sagar HEP	GT4	PP.E.RSDPH.GT.EA_GT4_E

Chapter 4
Unique Meter Codes (M-Codes)

4.0 There could be a possibility of having many meters at a particular location. In other words a L-Code can have different energy meters may be for different purpose and/ of different type. To represent the same M-Codes (meter identification codes) are required.

The format of the same shall be:

<L-Code where the meter is installed> . <MP-Code of the meter>

To illustrate the M-Codes of following meters are as follows:

Station Name	Feeder Name	Meter Category	After Corrected
220 kV Ganguwal	33 kV Nurpurbedi	Main	BB.E.GANGL.LN.B_GANGL_NURPB.MS
220 kV Barnala	220KV Barnala (PSTCL)	Main	BB.E.BARNA.LN.E_BARNA_BARNL.MS
220 kV Bhakra Left	66 kV PACL	Main	BB.E.BHAKR.LN.C_BHAKR_PACL .MS
220 kV Jalandhar	220KV Butari	Main	BB.E.JLNDR.LN.E_BUTRI_JLNDR.MS
220 kV Jalandhar	220/132KV T1 (HV)	Main	BB.E.JLNDR.XF.ED_T1_E.MS
220 kV Jalandhar	220/132KV T2 (HV)	Main	BB.E.JLNDR.XF.ED_T2_E.MS
220 kV Jalandhar	220/132KV T3 (HV)	Main	BB.E.JLNDR.XF.ED_T3_E.MS
220 kV Jalandhar	220/132KV T4 (HV)	Main	BB.E.JLNDR.XF.ED_T4_E.MS
220 kV Jalandhar	220/66 kV T1 (HV)	Main	BB.E.JLNDR.XF.EC_T1_E.MS
220 kV Jalandhar	220/66 kV T2 (HV)	Main	BB.E.JLNDR.XF.EC_T2_E.MS
220 kV Jamalpur	220KV Dhandari Ckt-1	Main	BB.E.JAMAL.LN.E_DHNDR_JAMAL1.MS
220 kV Jamalpur	220KV Dhandari Ckt-2	Main	BB.E.JAMAL.LN.E_DHNDR_JAMAL2.MS
220 kV Jamalpur	220/132KV T1 (HV)	Main	BB.E.JAMAL.XF.ED_T1_E.MS
220 kV Jamalpur	220/132KV T2 (HV)	Main	BB.E.JAMAL.XF.ED_T2_E.MS
220 kV Jamalpur	220/132KV T3 (HV)	Main	BB.E.JAMAL.XF.ED_T3_E.MS
220 kV Jamalpur	220/66 kV T1 (HV)	Main	BB.E.JAMAL.XF.EC_T1_E.MS
220 kV Jamalpur	220/66 kV T2 (HV)	Main	BB.E.JAMAL.XF.EC_T2_E.MS
220 kV Jamalpur	220/66 kV T3 (HV)	Main	BB.E.JAMAL.XF.EC_T3_E.MS
220 kV Pong	66 kV Talwara	Main	BB.E.PONG .LN.C_PONG_TLWR .MS
220 kV Sangrur	220/66 kV T1 (HV)	Main	BB.E.SNGRU.XF.EC_T1_E.MS
220 kV Sangrur	220/66 kV T2 (HV)	Main	BB.E.SNGRU.XF.EC_T2_E.MS
220 kV Sangrur	220/66 kV T3 (HV)	Main	BB.E.SNGRU.XF.EC_T3_E.MS
220 kV Jassur	220KV RSD Feeder	Standby	HP.E.JASOR.LN.E_JASOR_RSDPH.SS
220 kV GVK Power	Amritsar I/Botianwala Ckt-1	Check	PI.E.GWLTP.LN.E_BOTIA_GWLTP1.CS
220 kV GVK Power	Amritsar I/Botianwala Ckt-1	Main	PI.E.GWLTP.LN.E_BOTIA_GWLTP1.MS
220 kV GVK Power	Amritsar II/Botianwala Ckt-2	Check	PI.E.GWLTP.LN.E_BOTIA_GWLTP2.CS
220 kV GVK Power	Amritsar II/Botianwala Ckt-2	Main	PI.E.GWLTP.LN.E_BOTIA_GWLTP2MS
220 kV GVK Power	Ferozpur I/Chohal Ckt-1	Check	PI.E.GWLTP.LN.E_CHOHL_GWLTP1.CS
220 kV GVK Power	Ferozpur I/Chohal Ckt-1	Main	PI.E.GWLTP.LN.E_CHOHL_GWLTP1.MS
220 kV GVK Power	Ferozpur II/Chohal Ckt-2	Check	PI.E.GWLTP.LN.E_CHOHL_GWLTP2.CS

Chapter 5
Data Flags (F-Codes)

5.0 There shall be codes to indicate the Type of Data (TT), Quality of Data (QQ) and Source of Data (SS) as follows:

Codes for Indicating Type of Data (TT)

Sr.	Flag Code	Description
1	MI	Instantaneous Value.
2	ML	Load Survey Value
3	MD	Day Level Value

Codes to indicate Overall Data Quality (QQ)

Sr.	Flag Code	Description
1	GD	Good Value. Good value if Source of Data it is either CD, OL, MS, SV, etc., below.
2	SP	Suspect Value. Suspect if UN, NU, etc. This can also be used if there is mismatch between Main, Check & Standby Meter data.

Codes to indicate Source of Data (SS)

Sr.	Flag Code	Description
1	OM	Online Data is available & updating as is designed for the system via Multi-Drive
2	OE	Online Data is available & updating via Backup System Ezi-View
3	CD	Data has been Downloaded through CMRI and integrated in the database
4	SV	Substituted Value. To be used if value is substituted automatically based upon some rules
5	MS	Manually Substituted Value. To be used if value is substituted manually.
6	UN	Un initialized. To be used in case no data has been received since start of the system.
7	NU	Not Updating. Data was previously available, but now it is not updating or has not been updated. Updating period/ time out should be definable for different types of data before NU may be indicated
8	CL	Calculated Values. To be used for values those are derived from acquired values.

These codes shall be combined to drive a single flag which shall indicate all the three above as follows:

<TT><QQ><SS>

If data is available from multiple sources, it should be stored as such with different flags indicating the source. But when a select query is executed for offline reports the priority of data returned should be MS, CD, OM,OE, SV, NU, UN, etc. For online displays/ reports/ dashboards, etc. the priority shall be OM,OE, SV, MS, CD, etc.