# CHAPTER 8

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### 8.1 General

The purpose of inspecting customer's installation is to ensure that

1. Section 12(1) of the Electricity Ordinance is complied with, i.e. "An Electricity Supplier shall not connect the electricity supply to a fixed electrical installation unless he has inspected the installation and is satisfied that it is safe to do so".

2. The interface between the customer's installation and HK Electric equipment is suitably designed and constructed for connection of supply.

3. REC/REW shall install the electrical installation in compliance with HK Electric Supply Rules, the latest edition of Code of Practice for the Electricity (Wiring) Regulations (CoP) and other relevant Government Ordinances and Regulations.

### 8.2 Inspection Criteria

Supply shall not be connected if any departure is outstanding.

### 8.3 Departure Check Lists

To assist customer/REC/REW to inspect their installation and rectify the departures prior to HK Electric inspection, some general departures and examples of acceptable arrangements (noted in 🎯) for common departures are listed below for reference:

1. Departures from The Electricity Ordinance

   a. Main Switch

| Code | Description |
|---|---|
| BMXQ | Circuit breaker inserted in neutral circuit not inherently linked to cut all live conductors. |
| BSVE | Insulation resistance less than 1 mega ohm. |

BXWN Weatherproof outdoor cubicle for housing main switch and distribution board not provided.

CDQL Main switch live parts not properly enclosed or insulated.

CIXI Main cables not mechanically protected.

- *XLPE/PVC or PVC/PVC cable should be used.*
- *Non-sheathed cables should be protected by conduit or trunking.*

CPRL Protective conductors/earthing conductors undersized.

- *Conductor size should refer to Codes 11C and 11H of CoP.*

CWQS Category 2 circuits not segregated from circuits of other categories.

- *Circuit segregation should be arranged according to Table 5(1) of CoP.*

DLXF A label indicating in English and Chinese "Safety Earth Connection - Do not Remove" at all main earthing and bonding connections not provided.

EIXF Earth electrode (with inspection pit) not provided.

ELVE Earth fault loop impedance above permissible value.

- *Maximum permissible earth fault loop impedance should refer to Code 11I of CoP.*

EMXC Customer's earthing system not bonded to Company’s earthing terminal with removable link or equivalent means for isolation.

FHXM Fuse installed in neutral circuit.

MWBJ The main cable defective.

MWIE Main cable without phase identification.

MWPE Main cable connected up with incorrect polarity.

MWRH Main cable undersized when compared to main switch rating.

MZDJ The meter board wirings defective.

NLXF Copper link not installed in neutral circuit at main switch.

- *4-pole or TP&N main switch should be used for three-phase installation.*

PPTG Main incoming water/gas pipe not bonded to earth.

RDVF RCD not installed as required.

SCFD Change-over device defective.

SDXF Double-pole main switch not installed for single-phase installation.

SMBJ Main switch (including all associated protective devices) defective.

SMXC Main switch exposed metal parts not earthed.

SWSL Main switch with inadequate short circuit breaking capacity.

- *Minimum breaking capacities of overcurrent protective devices and/or backup fuses should be installed according to Table 9(2) of CoP.*

b. Final Circuits

AECI Lighting fitting and stationary appliances having a heating element inside bathroom not positioned out of the reach by a person using a shower or fixed bath.

AEQI Live parts not inside enclosure or behind barrier or insulated.

AEWN Equipment exposed to weather not of weatherproof type.

AMJF Local switch for motor not provided to cut off all live conductors.

- *Double-pole switch should be used for single-phase motor.*
- *TP, TP&N or four-pole switch should be used for three-phase motor as appropriate.*
- *Plug and socket outlet may be used.*

BRXM Control switch other than approved means installed in bathroom.

- *Insulating cords of cord-operated switch should be used.*

BXXC Metal casing of equipment not earthed.

CFXE Flexible conduit used as circuit protective conductors.

- *Separate protective conductor should be provided inside or outside of the flexible conduit.*

CPML Protective conductor undersized.

- *Conductor size should refer to Code 11C of CoP.*

CTXE 15-A socket outlet (non-industrial type) not connected in an exclusive radial circuit with appropriate fuse or MCB.

CTXF 5-A socket outlet (non-industrial type) not connected in an exclusive radial circuit with appropriate fuse or MCB.

DBEF Proper terminal connectors for circuit protective conductors not provided at distribution board.

DBNE Durable labels not provided at distribution board.

DBQI Distribution board not provided with proper phase barrier and insulation screen.

DBXF Protective conductor not installed at distribution board.

ELHF Earth fault loop impedance for distribution board above permissible value.

🎯 *Maximum permissible earth fault loop impedance should refer to Code 11I of CoP.*

ESZC Supplementary bonding not provided.

FHCD Protective device not matched with the rated conductor in the circuit.

FHNC Fuse installed in neutral circuit at distribution board.

LEPB Phase conductor not connected to the centre contact of the Edison-type screwed lamp holder.

LUXC Metal box for mounting lighting switch not earthed.

OOKB Circuit protective conductors of ring 13-A socket outlet circuits not run in the form of ring.

OSEB Individual circuit protective conductor not provided for every 13-A/15-A socket outlet.

OSEC Socket outlet and/or associated metal box not earthed.

OSPK Wiring at socket outlet connected up with incorrect polarity.

RBXM Shaver supply units not complying with approved pattern.

🎯 *Shaver supply unit complying with IEC 61558-2-5 or equivalent should be used.*

RBXZ Socket outlet in bathroom not complying with installation standard.

🎯 *Socket outlet in bathroom should be installed beyond zone 2 in compliance with Code 26A(3)(j) of CoP.*

RDSF RCD of 30-mA operating current not provided for socket outlet/circuit supplying equipment (in bathroom and within 2.25 m height) with exposed conductive parts.

SWPK Wiring at switch connected up with incorrect polarity.

SWRI Motor not provided with means to prevent unexpected restarting that might cause danger.

c. Rising Mains

BCIF Busbar chamber and riser not provided with phase identification.

CPRB Protective conductor for the rising mains smaller than 70 sq. mm. Cu or equivalent.

CYML Lateral mains undersized when compared to the rating of the protective device.

FCIF Cutout fuse box/switch not provided with phase identification.

NBXF Suitable neutral/earth block not installed for lateral mains at each floor.

RMML Rising mains undersized when compared to the ratings of the protective device.

RMQL Riser live parts not properly enclosed/insulated.

RSBJ Instantaneous trip RCD used as riser switch or cutout of multi-customer premises.

- *RCD with appropriate time delay and operating limits may be used.*
- *Earth fault relay may be used.*

RTXF 3-phase 4-wire lateral mains tee-off from rising mains not provided at each floor.

d. Others

INTE Poor workmanship.

INXE Miscellaneous uncommon defect.

2. Departures from HK Electric Supply Rules

a. Pre-Inspection Check

| | |
|---|---|
| ADXP | Incorrect service address. |
| AEZE | Part of the installation not ready for inspection. |
| AILF | Service address identification label not fixed at meter tails. |
| CCCS | Cross connection check sheet not provided. |
| DCXF | Copy of Work Completion Certificate not provided. |
| DFRM | Separate application for riser installation inspection not provided. |
| DOXP | Service address not confirmed and/or amended with legal document at Customer Centre. |
| INAA | Whole installation inaccessible for inspection. |
| INZB | Load transfer not completed. |
| INZE | Whole installation not ready for inspection. |
| PIRE | Supply arrangement to be confirmed. |

b. Main Switch

| | |
|---|---|
| AEFA | Shutdown of supply not arranged for functional check of ACB/RCD/changeover. |
| AEXP | Catalogue of equipment not provided. |
| BAFI | Functional check of main incomer not performed. |

BMOF Non draw-out type circuit breaker installed when obtaining supply directly from HK Electric transformer.

- *An isolator in conjunction with a fixed type circuit breaker may be used, provided that it is mechanically interlocked with the circuit breaker.*
- *Fused switch may be used.*
- *Plug-in type MCCB may be used.*

BTLE The busbar between transit block and main switch exceed 10 metres.

DASF Label not provided on multi-setting main switch to indicate the rated setting.

DOEP Information not provided to prove grading of protection system with HK Electric system.

- *Typical protection scheme for L.V. main switch directly fed by HK Electric transformer should refer to Clause 4.6.*

DORP Confirmation document for load limitation and transference of all existing wirings to the new HK Electric service cutout not provided by registered customer.

DWXF As fitted wiring diagram showing the main distribution system not provided in the main switchroom.

GNXF Interlock scheme for standby generator not installed.

- *Electrically and mechanically interlocked 4-pole changeover devices should be used for interconnection between the normal and standby sources.*

HELE The cables between HK Electric service cutout and main switch exceed 3 metres.

HERF Building main switch directly above HK Electric service cutout not installed.

HETM Cables terminated at HK Electric service cutout exceed two sets.

- *A building main switch should be installed to control all outgoing circuits.*

HXLE The cables between HK Electric transformer and main switch exceed 20 metres.

ILXD Interlock scheme for interconnection of two or more supply sources not function properly.

ILXF Interlock scheme for interconnection of two or more supply sources not installed.

- *Electrically and mechanically interlocked 4-pole type should be used for all incoming and interconnection circuit breakers.*

INFA Supply not available to complete the inspection.

ITVA Shutdown of supply not arranged for insulation resistance check.

LMXB The G/F lateral mains not connected directly to HK Electric service cutout.

MBXF Main switch not installed immediately before HK Electric meter.

MEZP Document for disconnection of temporary meter not provided.

MWRL Incorrect size for meter wires for whole current (direct connected) type meter.

- *Sizing of meter wires should refer to Drg. No. GCS/5/14.*

MWTK Main wires not properly terminated at HK Electric service cutout.

- *Termination requirements should refer to Drg. Nos. GCS/3/05 and GCS/3/07.*

MWXF Main wires not connected to HK Electric supply source.

RMLH C.I. form 140 (confirmation of agreement from owner of rising mains for connection of electrical installation with an increased current demand) not provided.

SCFI Functional test of changeover device not performed.

SFXF 4-pole switch not used to interconnect standby generator and normal supply source/two or more sources of supply.

SMLA Load limitation device not provided.

SMSP Information not provided to prove breaking capacity of main switch.

SMXF Length of main cable between main switch and whole current (direct connected) type metering point exceeds 3 metres.

SMXP Main switch rating different from the rating on application form.

SOOE The switchroom/meter room used as a store.

c. Meter Position

BOWF Outdoor weatherproof cubicle to accommodate tariff meter not provided.

CBIE Busbar inside C.T. chamber without phase identification.

CBXL Busbar inside C.T. chamber not insulated.

CEXF Voltage wires for C.T. operated meter not provided/not connected at the load side.

CEXJ Circular copper strand conductor not used for termination into the direct-connected type meter.

DAXF Tidy, permanent and securely fixed address label not provided for meter board/main switch/meter cubicle.

DOMP C.I. form 135 (confirmation of no double metering) not provided/Shutdown of supply not arranged for double metering check.

MBBE Loose meter board not securely fixed.

MBCF Working clearance in front of meter less than 900 mm.

MBHE Meter board position above 2.25 m.

MBLE Meter board position below 0.9 m for meter room or 2.15 m for public area.

MBXA Meter position located inside customer's premises.

MBXE Size of meter board not comply with HK Electric requirement.

MCDJ Meter cubicle defective.

MEXF Metering equipment not installed.

MFCE Side clearance for fuse holders inside C.T. chamber less than 50 mm.

MFXF Fuse holders & link inside C.T. chamber not installed in accordance with HK Electric requirement.

- *Requirement of fuse holders & link inside C.T. chamber should refer to Drg. No. GCS/5/19.*

MGXR Metering point not close to supply source.

MHCF Working clearance in front of C.T. chamber/C.T. cum link box less than 900 mm.

MHEC Metallic part inside C.T. cum link box not earthed.

MHGD Cable gland not installed at C.T. chamber.

MHHE C.T. chamber position above 2.6 m.

MHLE C.T. chamber position below 0.9 m for meter room or 2.15 m for public area.

MHXE C.T. chamber not comply with HK Electric requirement.

- *C.T. chamber requirement should refer to Clause 5.8. and Drg. No. GCS/5/19.*

MHXF C.T. chamber and metering wiring not installed.

MIXM Check meter installed.

MJXF Meter wirings for whole current (direct connected) meter not installed.

MLDM Unrequired perishable meter leads not removed.

MMAA Metering multi-core cable not surface mounted and properly fixed.

MSXE Proper sealable screw not provided at C.T. chamber.

MTCR C.T. inside C.T. chamber not installed with correct ratio.

MTPE C.T. inside C.T. chamber not installed with correct polarity.

- *Requirement of C.T. inside C.T. chamber should refer to Drg. No. GCS/5/21.*

MTXK C.T. inside C.T. chamber not securely fixed by bakelite.

MWCE Meter termination clearance not comply with HK Electric requirement.

- *Meter termination clearance should refer to Drg. No. GCS/5/14.*

MWIS Meter leads and meter tails without permanent phase identification.

MWLF Meter leads and meter tails not long enough for meter fixing.

- *Length of meter leads and meter tails should refer to Drg. No. GCS/5/14.*

MWXG Two sets of main wires not combined into one set.

OPXI Openings in C.T. chamber not well covered.

UEXM Unauthorized extension not removed.

d. Final Circuits

AMRE Motor of 3.8 kW or greater (overhead line supply)/ 11 kW or greater (non overhead line supply) without suitable starter to limit the starting current to 2.5 times the running current.

AMRJ Single-phase motor greater than 1.5 kW (overhead line supply)/2.2 kW (non overhead line supply).

CPXF Capacitors for discharge lamps to improve power factor not installed.

e. Rising Mains

FCZA Fuse link not installed in cutout.

KMXF Master key for meter duct/room not provided.

LUXF Lighting point for meter room not provided.

RMSF Local riser switch for multi-customer rising mains at each tower not installed.

f. Others

INXS Miscellaneous uncommon departures.