



STANDARD OPERATING PROCEDURE FOR SAFE WORKING



ISSUED BY
KASHMIR POWER DISTRIBUTION CORPORATION LIMITED



Important Safety Tips

- Take up work on de-energized Line/ Equipment or work near energized Line / Equipment under proper Permit to Work (PTW) only.
- Ensure physical/ visible isolation of Line/ Equipment on which work is to be carried out.
- Ensure grounding of de-energized Line / Equipment by using Temporary Earthing Rods before working.
- Use Helmet to prevent head injuries due to fall/ falling objects which can prove fatal.
- Use Safety Belt for working at elevated height to prevent fall.
- Use Rubber Hand Gloves of proper voltage grade while working on LT, operating Isolating Devices, installing Temporary Earthing etc.
- Use Safety Shoe to prevent foot injury and for electrical shock resistance protection.



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Note: This Standard Operating Procedures for safe working has been issued by Managing Director Kashmir Power Distribution Corporation Ltd. (KPDCL) vide Circular no. MD/KPDCL/Ts/I/1040-48 dated 28.09.2020

1. **DEFINITIONS**

- 1.1 Unless otherwise specifically mentioned hereinafter, the various terms used in this SoP shall have the same meaning as provided in the Indian Electricity Rules, 1956 or Central Electricity (Measures relating to Safety and Electric Supply) Regulations, 2010, with amendments issued from time to time.
- 1.2 **“Authorized Permit to Work (PTW) Issuer” or “Authorized Person”** shall mean a person who has been authorized in writing by the concerned Executive Engineer of the KPDCL, to issue PTWs within the territorial jurisdiction of such Executive Engineer.
- 1.3 **“Authorized Permit to Work (PTW) Receiver” or “Authorized Field Supervisor”** shall mean a person who has been authorized in writing by the concerned Executive Engineer of KPDCL, to receive PTWs within the territorial jurisdiction of such Executive Engineer. These shall also include the qualified Engineers and Technicians of the bonafide contractors of KPDCL who have been identified by such Contactor in writing and authorised by KPDCL to receive PTWs in the same manner as the Employees of KPDCL.
- 1.4 **“Permit to Work or PTW”** shall mean an authorization in writing by the Authorized Person to the Authorized Field Supervisor to carry out a specific work on de-energized, isolated and earthed line or equipment or carryout work on or near an energized equipment or line. The format for PTW is attached as **Annexure ‘B’**.
- 1.5 The competent authority for providing shutdown to LT/11kV/6.6kV/33kV Feeders shall be as follows:
- | | | |
|------|-----------------------|--------------------------------------|
| i. | At LT Level: | Concerned Asstt. Executive Engineer |
| ii. | At 11kV/6.6kV Level : | Concerned Superintending Engineer |
| iii. | At 33kV Level: | Chief Engineer (Distribution), KPDCL |

All the shutdowns at 33kV level shall be approved by Chief Engineer (Distribution), KPDCL in consultation with Chief Engineer, Transmission, Kashmir, JKPTCL and Chief Engineer (Trading), JKPCCL for proper load management. The format for approval of shutdown by the Competent Authority is attached as **Annexure ‘A’**.

2. Standard Operating Procedure to be followed during Emergency Restoration (Faults)

- 2.1 Whenever a Single Overcurrent Fault occurs on any 11kV/6.6kV Feeder and feeder is tripped, the Shift Attendant/Incharge shall charge back the feeder within 5 (Five) minutes. In case the feeder trips again or feeder is not charged within 5 (Five) minutes, the procedure as described below for Double Overcurrent/Earth Fault shall be followed.
- 2.2 Whenever a Double Overcurrent or Earth Fault occurs on any 11kV/6.6kV Feeder and feeder is tripped, the Shift Attendant/Incharge shall hang **DANGER BOARD (Feeder Under Fault)** on the respective feeder panel.
- 2.2 The Shift Attendant/Incharge shall inform the:
- a. Authorized Work Permit Issuer**
 - b. Authorized Field Supervisor** from the field division about the occurrence of fault.
- The Junior Engineer of the 33/11/6.6kV Sub-Stations shall ensure that the Shift Attendant/Incharge inform the concerned Authorized Field Supervisors only about the occurrence of faults rather than informing directly to Linemen/Line Patrols. Not informing Authorized Field Supervisors about the occurrence of faults shall be treated as violation of SoP.
- 2.3 Upon receiving information from Shift Attendant/Incharge about fault, the concerned Authorized Field Supervisor shall **inform the concerned Line Patrols/Line Erector/Lineman**, as the case may be, about the occurrence of fault.
- 2.5 In case the fault has to be cleared by means of working on electrical network of the feeder, **the Authorized Field Supervisor shall approach the Authorized Work Permit Issuer through any of the following modes in order to get the PTW issued:**
- a. Personally in 33/11/6.6kV Sub-Station.**
 - b. PTW request through Phone Messaging Service (WhatsApp/SMS)** by clearly mentioning the Name of Feeder, Isolations required, Indications of multiple feeder crossings. However, before sending the request through Phone Messaging Service (WhatsApp/SMS), the Authorized Field Supervisor shall

contact the Authorized Work Permit Issuer and Shift Attendant/Incharge through his mobile number and establish a dialogue in this regard.

- 2.6 Once PTW is approved by Authorized Work Permit Issuer, the Shift Attendant/Incharge on the instructions of Authorized Work Permit Issuer **shall Rack-Out the Circuit Breaker and subsequently isolate the 11kV/6.6kV Feeder by operating 11kV/6.6kV Isolator/Link Set/GO AB Switch and apply temporary EARTH** to the outgoing side of 11kV/6.6kV Feeder.
- 2.7 In the case of PTW request received through Phone Messaging Service, the Authorized PTW Issuer shall make all entries in PTW form himself. The Authorized Field Supervisor shall ensure that the 11kV/6.6kV Feeder has been properly isolated and earthed by **obtaining a PTW No/Code from the Authorized Work Permit Issuer**
- 2.7 The Authorized Field Supervisor shall ensure that the 11kV/6.6kV Feeder is Earthed through Temporary Earthing at the convenient location near the work site, before touching the same. He shall also ensure that the working personnel shall wear the required PPE depending upon nature of work.
- 2.8 The Authorized Field Supervisor shall remain present at the site of work during complete work. Once the Authorized Field Supervisor ensures that the work is completed and all his Line Patrols/Line Erectors/Lineman, as the case may be, have moved to safe distance and the Temporary Earth has been removed, **the Authorized Field Supervisor shall return the PTW for cancellation in the same manner as was requested i.e. either Personally approaching 33/11/6.6kV Sub-Station or through Phone Messaging Service (WhatsApp/SMS). However, it is emphasized here that REQUEST and CANCELLATION of PTW shall be made in the same manner, i.e Request of PTW by personal appearance and Cancellation of same PTW through Phone Messaging Service (WhatsApp/SMS) and vice-versa is not allowed.**
- 2.9 After receiving PTW/Line Clear Code/Clearance **from the Authorized Field Supervisor, the Authorized PTW Issuer shall cancel the PTW and shall instruct the Shift Attendant/Incharge to remove the temporary earthing, close the 11kV/6.6kV**

Isolator/Link Set, remove Danger Board (Feeder under Fault), Rack-in the Circuit Breaker, and subsequently Close the Breaker on the Feeder.

2.10 **All the above procedures/events shall be noted serially in Log Sheet/PTW register, as the case may be.**

2.11 In case of fault on 33kV Feeder similar procedure as above shall be followed by the 220/132kV Sub Station Personnel or 132/33kV Sub-Station Personnel, as the case may be, from which 33kV Feeder is emanating and the line crew of the 33kV line who are operating and maintaining such 33kV lines.

2.12. In case of works inside 33/11kV Sub Stations, the equipment or bus bar to be worked upon shall be isolated by tripping the relevant breakers and isolating the equipment by relevant 33kV Isolators/ 11kV Incomer as the case may be. Thereafter equipment / bus bar to be worked upon shall be earthed before touching the same. The Authorized PTW Issuer shall issue the PTW and the Authorized Field Supervisor shall receive the PTW in the same manner as detailed in respect of 11/6.6kV lines except that PTW shall be applied, approved, issued and cancelled in person and in writing only. The PTW proceedings through Phone Messaging Service (WhatsApp/SMS) shall not be allowed.

2.13. In case of 33kV/11kV/6.6kV Feeders fed from both ends or feeders which have been charged temporarily from the end other than usual 33/11kV Sub Station end or 220/132kV Sub Station end or 132/33kV Sub Station as a contingency measure, PTW shall be got issued from both the ends before start of work.

Note:

1. Whenever there is a rotation of Shifts duties between Shift Attendant/Incharges, there should be proper handover-takeover on register wherein status of feeders shall be explicitly written whether in CLEAR mode or FAULT mode or MEN at work.
2. The complete report of PTWs shall be maintained by the concerned Sub-Division for perusal of higher ups at least for one year.
3. There should be monthly meetings of officers upto AEE level between the field sub-divisions and STD Sub-divisions for review of safety and other procedures.

3. Standard Operating Procedure to be followed during Planned Shutdowns

3.1 The competent authority for providing shutdown to LT/11kV/6.6kV/33kV Feeders shall be as follows:

- | | | |
|------|-----------------------|--------------------------------------|
| i. | At LT Level: | Concerned Asstt. Executive Engineer |
| ii. | At 11kV/6.6kV Level : | Concerned Superintending Engineer |
| iii. | At 33kV Level: | Chief Engineer (Distribution), KPDCL |

All the shutdowns at 33kV level shall be approved by Chief Engineer (Distribution), KPDCL in consultation with Chief Engineer, Transmission, Kashmir, JKPTCL and Chief Engineer (Trading), JKPCCL for proper load management. The format for approval of shutdown by the Competent Authority is attached as **Annexure 'A'**.

3.2 After approval from competent authority for planned shutdowns, the concerned Authorized Field Supervisor shall request for "PERMIT TO WORK" (PTW) before the Authorized PTW Issuer in PTW format attached as **Annexure 'B'**.

3.3 Once the PTW is approved, the Shift Attendant/Incharge of 33/11/6.6kV Sub-Station on the instructions of Authorized PTW Issuer shall TRIP the Circuit Breaker, Rack-Out the Circuit Breaker and hang **DANGER BOARD (MEN AT WORK)** on the respective feeder panel.

3.4 The Shift Attendant/Incharge shall subsequently isolate the 11kV/6.6kV Feeder by **operating the 11kV/6.6kV Isolator/Link Set/GO AB Switch and apply temporary EARTH** to the outgoing side 11kV/6.6kV Feeder.

3.5 After performing the above steps, the PTW shall be issued to the Authorized Field Supervisor requesting the same.

3.6 The Authorized Field Supervisor after ensuring himself about proper isolation shall also **apply Temporary Earth at the place of work and use all PPE before allowing the men to work.**

- 3.7 Once the work has been completed, Temporary Earth at place of work stands removed and all the personnel whosoever has been engaged in work have moved to a safer distance from the electrical network, **the Authorized Field Supervisor shall confirm the same to the Authorized PTW Issuer by means of RETURNING THE PTW and by writing clearance on the log sheet available in Receiving Station concerned.**
- 3.8 After receiving clearance and PTW from the Authorized Field Supervisor, the Authorized PTW Issuer, shall cancel the PTW and instruct **the Shift Attendant/Shift Incharge to remove the Temporary Earthing, close the 11kV/6.6kV Isolator/Link Set/GO AB Switch, remove the DANGER BOARD (MEN AT WORK) Rack-In the Circuit Breaker, and Close the Circuit Breaker.**
- 3.9 **The Authorized Field Supervisor shall remain present at the site of work during complete work and Authorized PTW Issuer shall remain present at 33/11/6.6kV Sub-Station during Issuance and Cancellation of PTW.**
- 3.10 **All the above procedures/events shall be noted serially in Log Sheet/PTW register, as the case may be.**

Note:

1. Whenever there is a rotation of Shifts duties between Shift Attendant/Incharges, there should be proper handover-takeover on register wherein status of feeders shall be explicitly written whether in CLEAR mode or FAULT mode or MEN at work.
2. The complete report of PTWs shall be maintained by the concerned Sub-Division for perusal of higher ups at least for one year.

4. PERMIT TO WORK GUIDELINES

“PROVIDE SAFE WORKING CONDITIONS PROTECT PRECIOUS LIVES”

WORK ON LIVE APPARATUS AND MAINS

- 4.1 No employee shall carry out or attempt any work on live apparatus, overhead or underground system except under the supervision of an Authorized Field Supervisor, who has been allowed to carry out such work by issuance of PTW.

- 4.2 Where, in the interest of continuity of supply, it is necessary after taking due precautions, to work on live electrical equipment for cleaning and repair work, particularly in Receiving Stations and Distribution Sub-stations, such work shall be carried out only under the personal supervision of an officer who has been allowed to carry out such work by issuance of PTW.

APPLICATION FOR PRE-ARRANGED SHUT DOWN

- 4.3 Except for emergencies, all work for repairs, maintenance and construction on or in close proximity to live apparatus and mains shall be pre-arranged and programmed. Accordingly, applications for pre-arranged shut-downs shall be submitted by the concerned field Sub-Divisions to the Competant Authority, which when duly approved, will be presented to the concerned Permit Issuing Officer for switching out the apparatus and issue of 'Permit-to work'. These applications shall be made sufficiently in advance to enable the Authorized PTW Issuer to carry out necessary load transfers, if any, and other operations in connection with the work. The duration and nature of work must be clearly explained to the Permit Issuing Officer before getting a permit.

AUTHORISATION

- 4.4 No person shall be deemed to be authorized unless the same has been entered in the list maintained at the Sub-Divisional Office and 33/11kV Sub Station and the entry has been attested by the person so authorized.

- 4.5 A list of authorized persons shall be maintained at the Office of the respective Executive Engineers and at each center of activity by the respective Assistant Executive Engineers. The list shall clearly define the extent of all such authorization.

4.6 Duties to be performed only by an Authorized person are:-

- (a) Issue and receipt of permits for working on distribution lines, service lines, underground cable, and all equipment installed in the 33/11/6.6kV Sub Stations, Sub-stations, Distribution System etc.
- (b) Discharging permits issued above.
- (c) Operating air break switches when alive.
- (d) Renewal of fuses on H.T. sides of transformers.
- (e) Work on live equipments, or live lines, where the voltage to earth does not exceed 250 volts AC or DC like renewal of street bulb, renewal of aerial fuse, cut-outs, fuses and consumer fuses, renewal of L.T. fuses of transformer and L.T. feeders.
- (f) Testing consumer's installations and effecting service of L.V. installations.
- (g) Repairing or connecting L.T. equipment such as meters, time switches, etc.
- (h) Possession of keys / switches / kiosks / RMUs / Isolators and equipment.
- (i) Inspection, testing and maintenance work.

ISSUE OF PERMIT TO WORK

4.7 Before any work or testing is carried out on live mains and apparatus connected to distribution system, a 'Permit-to-work' (PTW) in the prescribed form covering the apparatus and mains to be worked on or tested must be issued, except in extenuating circumstances such as for the purpose of saving life or plant in the event of any emergency. In such cases, the action taken is reported to the concerned Power Station or the Executive Engineer/Asstt. Ex. Engineer without the least delay.

4.8 The staff authorizing the work shall issue to the Authorized Field Supervisor necessary authorization in the prescribed form and this will only become valid after the Permit Issuing Officer, who is responsible for the power supply to the Distribution system, has signed on the form and returned it to the Authorized Field Supervisor.

4.9 The issue of the 'Permit-to-work' (PTW) form by the Authorized PTW Issuer to the Authorized Field Supervisor gives the line clear and authority for the Authorized Field Supervisor to proceed with the work. The Authorized Field Supervisor shall keep in his possession the PTW form throughout the duration of the work.

- 4.10 If, for any reasons, the pre- arranged shutdown work cannot be completed within the period applied for, intimation will be given to the Authorized PTW Issuer and duration of permit, extended suitably on the permit Form.
- 4.11 In the case of work on consumer's installations, the consumers should be advised of such extensions, sufficiently in advance to avoid inconvenience.

SPECIAL INSTRUCTIONS TO AUTHORIZED PTW ISSUERS

The Authorized PTW Issuer shall not issue the permit before: -

- 4.12 The switch/circuit breakers/Isolators or switches have been opened and are completely isolated on both sides; links and fuses opened, apparatus and mains discharged and earthed, and all adjacent live parts adequately protected. Where possible the switches/Isolators shall be locked out and keys kept in safe custody. Isolators/switch at control panels shall also be fixed with 'DANGER' boards.
- 4.13 "DANGER" boards should be attached to apparatus.
- 4.14 An entry is made in the log sheet or Register to the effect that the apparatus and mains under the permit have been made dead, on no account shall the apparatus and mains again be made alive until the return by the Authorized Field Supervisor of the PTW.
- 4.15 Where Sub-permits are issued by the Authorized Field Supervisors to competent persons working in different sections, such Sub-permits should only be accepted for cancellation by the Authorized Field Supervisor and under no circumstances should the Authorized PTW Issuer of the original permit, accept Sub-permit for cancellation.
- 4.16 The Authorized PTW Issuer shall, take necessary steps in the circumstances, to ensure that in the event of any tripping of automatic switch / circuit breaker, when the section is switched in such switch / circuit breaker shall not be re-closed until the section/apparatus is thoroughly checked.

SPECIAL INSTRUCTIONS TO AUTHORIZED FIELD SUPERVISORS

- 4.17 No employee shall be ordered or permitted to carry out any work, other than that for which he is specially, authorized in writing by the Executive Engineer/Assistant Executive Engineer.
- 4.18 The authorized person termed the Authorized Field Supervisor in charge of a working party (employees) shall keep with him a complete list of all persons who are detailed to work on the particular job. All other persons shall be warned to keep away from the area and no one shall be allowed to enter the area unless under a permit. This list shall be kept on record for any further reference.
- 4.19 The Authorized Field Supervisor, before allowing any Workmen to commence work on the lines, mains or apparatus shall:
- (a) Explain to the workmen the nature of work and the precautions taken by the Authorized PTW Issuer, to ensure the safety of the workmen and also the precautions to be taken by them during the whole time, when the work is in progress.
 - (b) Satisfy himself that the switch or switches Isolators controlling the mains and apparatus have been isolated, discharged, properly earthed where possible and tested for pressure with a discharge rod and that caution or Danger Notice have been placed at conspicuous places.
 - (c) Warn the workmen and the public of the danger that exists in the vicinity of the area covered by the 'Permit-to-work'.
 - (d) Create a safety zone by short circuiting together all the conductors and adequately earthing on either sides of the place of work.

TRANSFER OF PERMIT TO WORK FORM

- 4.20 Transfer of PTW from one Authorized Field Supervisor to another, is strictly prohibited. If there is more than one working party, separate permits should be issued to the Authorized Field Supervisor in charge of each working party and a written record should be kept of the number of such permits issued for each work.

4.21 If work is of such a nature and duration that it has to be carried out continuously, but under the supervision of more than one Authorized Field Supervisor on shift duty, the 'Permit-to-work' form shall be endorsed by the Permit Issuing Officer, cancelling the name of the Authorized Field Supervisor to whom it was originally issued and substituting the name of the second or subsequent Authorized Field Supervisor to whom the permit will now become valid. The time of each endorsement should be noted on the 'Permit-to' Work' form and it's duplicate.

ISSUE AND RECEIPT OF 'PERMIT-TO-WORK' BY THE SAME PERSON

4.22 In cases where the same person who has to issue the permit, has also to carry out the work covered by the permit, a 'Permit-to-Work' form shall be issued on himself before he undertakes the work and the form should be subsequently cancelled after the work is completed.

CANCELLATION OF 'PERMIT-TO-WORK' FORMS

4.23 PTW form issued to the Authorized Field Supervisor shall be returned to Authorized PTW Issuer only after all the works are complete, and earth removed so that the apparatus, mains and overhead lines are safe in all respects for charging and after all the workmen are withdrawn from the working area and are suitably warned that it is no longer safe to touch or approach the apparatus within the said area.

4.24 Under no circumstances shall any work be attempted after the return of the PTW form duly discharged. A fresh permit shall be obtained for completing the balance of work subsequently.

4.25 The return of the PTW form duly discharged will authorize the Authorized PTW Issuer, to resume normal operation.

4.26 The Authorized Field Supervisor will not allow his staffs to disperse before the Authorized PTW Issuer has tested the apparatus and advice the Authorized Field Supervisor that he has found the apparatus/ line is satisfactory for commissioning, so as to avoid any unforeseen difficulties in re-commissioning the apparatus and lines.

MAINTENANCE OF 'PERMIT-TO-WORK' AND APPLICATION FOR PREARRANGED SHUT DOWN BOOKS

- 4.27 A duplicate of every PTW and application for 'Pre-arranged Shutdown' shall be retained in the Office of the Authorized PTW Issuer for at least one year after issue.
- 4.28 The books should be treated as important record. The sheet and the books themselves should be serially numbered. No page should be detached or used for any but bona fide work.
- 4.29 If any paper is inadvertently detached or found to be missing, a detailed and initiated statement must be then and there recorded in the book by the Permit Issuing Officer.

REGISTER OF MESSAGE

- 4.30 All messages and instructions to issue of permit to work, the operation of switches, and other important communication shall be recorded in the strict sequence in the log sheet and Register of messages maintained by the person responsible for the operation of power supply to the transmission or distribution system.
- 4.31 The Authorized Field Supervisor responsible for the execution of the work shall also likewise record all messages and instructions relating to the operation of switches / circuit break / isolator and other important communication concerning the work, in a register of message maintained by him for the purpose.
- 4.32 The final issue or return of permit shall be logged in the book in ink underlined when change of shift occur during the pendency of permit, the outgoing permit issuing officer shall inform his reliever about the existence of all permits, and show him the relevant entries. The incoming Authorized PTW Issuer shall also sign in the log book while taking over charge to acknowledge that he has noted the pendency of the permits.

5. ESSENTIAL OPERATIONAL GUIDELINES FOR SAFE WORKING ON VARIOUS ELECTRICAL APPARATUS/LINES

- 5.1 All outage works which require touching of de-energized apparatus or line and works near energized line or apparatus shall be allowed under approved Permit to Work (PTW) only.
- 5.2 Appropriate PPE, as per the site requirement, must be worn, while performing electrical work.
- 5.3 Always treat circuit as live until you have proved them to be dead by HV Detector or Temporary Earthing at the site of work.
- 5.4 To prove de-energized and isolated lines or apparatus dead, before touching the same, High Voltage Detector/ Temporary Earthing shall invariably be used and before starting the work, the Temporary Earthing shall be fixed to the line or apparatus on all phases and kept fixed till the work is completed. In case of accidental charging, the Temporary Earthing shall discharge the hazardous voltage to ground and trip the supply from the source, thus voltage at site of work will not rise to the dangerous level.
- 5.5 While fixing the Temporary Earthing, the Earth Clamp shall be fixed to the Earth first and the other clamp meant for connecting to conductor shall be fixed last. While removing the Temporary Earthing, the Clamp fixed to conductor shall be removed first and the clamp connected to Earth shall be removed last.
- 5.6 Whenever fixing Temporary Earthing or operating any Electrical Switch, Isolator, Gang Operated Air Break (GOAB) Switch or Link Set, use HV Rubber Hand Gloves and turn your face away to guard against arcs. Remember, burns from arcs are very severe, even due to very short exposure.
- 5.7 Do not work on pole or any elevated position, without the safety belt, safety helmet and rubber gloves and unless the authorized person stands on the ground nearby to direct operation and give warning.

- 5.8 All breakers and isolators should bear lettering or sign boards to indicate the circuit they control. When releasing the electric circuits, breakers or apparatus for work on them, the associated breaker and disconnecting switches shall be opened in the following order:
- i. The breaker will be opened first.
 - ii. The breaker shall be 'racked out' in case of having working 'Rack Out' facility
 - iii. The Isolator/GOAB Switch/Link set as the case may be, will be opened, but before operating the isolator, it shall be made sure that the breaker is open. These isolating devices are not meant for load breaking. In case of accidental on load operation the isolating device may cause severe arc which may lead to human injury and damage to the isolating device.
 - iv. Do not close or open an Isolator or GOAB Switch or Link set, as the case may be, slowly or hesitantly. Do it quickly and positively.
 - v. After opening an Isolator or GOAB Switch or Link set as the case may be, check carefully to see that all blades are in full open position.
 - vi. If the circuit is controlled by automatic re-closing breaker, the re-closing mechanism shall be made inoperative.
 - vii. Close the Earth Switches towards side of the line / apparatus, on which work is to be carried out. In case no Earth Switch is provided, Temporary Earthing. shall be provided. eg on 11kV/6.6kV Feeders, the Earth Switch on 11kV/6.6kV Double Break Feeder Isolator towards line side shall be closed. In case Earth Switch is not provided, Temporary Earthing Shall be provided on line side of the Isolator or GOAB Switch or Link set, as the case may be.
- 5.9 While work is to be carried out on a transformer, both low and high tension breakers and isolators shall be opened. The Neutral Earth of Transformer shall also be removed.
- 5.10 Where Potential Transformers are connected, these shall be isolated by removing secondary fuses to prevent accidental secondary voltage injection, which may induce dangerous voltage on the primary side of Potential Transformer.
- 5.11 Current Transformer Secondary shall never be opened when current is flowing through Primary Circuit. A terminal of the secondary circuit of current transformers should be connected to ground at all times when the transformer is in service.

5.12 Potential transformers secondary should never be shorted. The low voltage winding of potential transformers should always have one side permanently and effectively grounded.

5.13 Every capacitor shall be treated as hot until proved otherwise. Capacitors stores energy and are not necessarily dead when disconnected from the line. Once charged, a capacitor may retain its charge for several hours, after it has been disconnected. When a capacitor is to be worked on, first open all cutouts or disconnecting devices to the capacitor, then wait for at-least five minutes for the internal resistors to reduce the voltage. Next, using the hot stick (discharge rod), short circuit and ground all terminals of the capacitors. These terminals should remain short circuited and grounded while work is being done on the capacitor. To bring the capacitor banks back into service, first remove the jumpers with hot sticks, and then close the cutouts.

5.14 The following minimum safety working clearance specified in Schedule – VII of Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 (at altitude of 1600 mtr) shall be maintained for the bare conductors and live parts of any apparatus in outdoor sub stations excluding overhead lines of installations of voltage above 650 V.

- a) 11kV/6.6kV 2.80 mtr
- b) 33kV 3.01 mtr

5.15 Repair work on H.T.lines on poles where L.T is also running under H.T. should be carried out only after switching off the L.T. effectively. Work on the L.T.lines should not be carried out unless there is an efficient earth screen between H.T. and L.T lines or in the absence of such a screen, unless the H.T line is switched off or in the opinion of the Authorized Field Supervisor, the work is otherwise safe.

5.16 Any line wherein the pressure does not exceed 250 V to earth may be worked on live line by an authorized person provided the person

- (a) Uses a safety belt.

(b) Wears rubber gloves or gauntlets

(c) Has not to push any part of the body, except that portion of the arms protected by the gauntlets or gloves through any conductor other than that worked upon.

(d) Is accompanied by an assistant with an effective torch light if working at night.

5.17 When making electrolyte for storage batteries always pour acid into the water. The reverse method may cause an explosion. Suitable goggles or face shields should always be worn when making electrolyte. Smoking and use of matches or other open flames are not permitted in battery rooms or while inspecting filling, testing or handling batteries.

5.18 While carrying ladders, pipes, conduits, reinforced rods and other long material in to stations, switchyards, switch gear rooms and other places where there is a danger of touching the live parts, the material should be held by two men, one at each end, and carried in the hands and not on the shoulders.

FORMAT FOR APPROVAL OF SHUTDOWN BY THE COMPETENT AUTHORITY

| S. No | Description | |
|-------|--|---|
| 1. | Shut Down Request No. | |
| 2. | Date | |
| 3. | Name of the Circle | |
| 4. | Name of the Division | |
| 5. | Name of the Sub Division | |
| 6. | Name of 33/11/6.6kV Sub Station in which shut down required or from which 11kV feeder emanating | |
| 7. | Name of 132/33kV kV Sub Station from which 33kV feeder emanating | |
| 8. | Element on which shut down is required (i.e Feeder or Equipment) | |
| 9. | Date/Time shut down requested from | |
| 10. | Date/ Time shut down requested upto | |
| 11. | Date/ Time shut down approved from | |
| 12. | Date/Time shut down approved upto. | |
| 13. | The Isolation /Earthing requested | <ol style="list-style-type: none">1. Breaker on 11kV Feeder;.....Open and withdrawn2. Isolator/GoAB/Link Set on 11kV Feeder.....Open3. Earthing on Line Side of Device at 2 above4. Local Earthing at convenient location. |
| 14. | Any Contingency Plan, ie load effected to be supplied from other source. If yes safety precaution to be taken. | |

Shut Down Requested by.....

Shut Down approved by.....

Name:

Name:

Designation.....

Designation.....

PERMIT TO WORK FORMAT

KASHMIR POWER DISTRIBUTION CORPORATION LIMITED

_____ kV Sub-Station

| |
|----------|
| PTW No.: |
|----------|

| <u>PERMIT TO WORK</u> <u>(Follow Safe Procedure at all times)</u> | | |
|--|-------------------------------|---|
| A. REQUEST | | |
| 1 | Work Area | |
| 2 | Work to be done | |
| 3 | Period of PTW | From: Date:_____ Time:_____ To: Date:_____ Time: _____ |
| 4 | Details of Isolation Required | 1. 2. 3. 4. |
| 5 | PTW REQUESTED by: | |
| | Name & Designation: | Date:_____ |
| | Signature: _____ | Time: _____ |

| | | |
|------------------------|---|---|
| B. ISSUE of PTW | | |
| 1 | Isolation have been carried out and recorded in Log-Book/Register | Isolations details: 1. 2. 3. 4. |
| 2 | Work Area is isolated and Earthed | Isolation Time: Earthing Time: |
| 3 | Any other precautions taken to achieve safety | 1. 2. |
| 4 | PTW ALLOWED | From: Date: _____ Time: _____ To: Date: _____ Time: _____ (Duration: ____ Hours ____ Minutes) |
| 5 | PTW APPROVED by: | |
| | Name & Designation: | Date:_____ |
| | Signature: _____ | Time: _____ |

| C. RECEIPT of PTW | | |
|--|---------------------|-------------|
| I hereby declare that I have inspected and have satisfied myself that such equipment where the work is to be carried out has been switched OFF and isolated/earthed. I also accept responsibility for carrying out work only on equipment detailed on this permit and that no attempt will be made by me or by any men under my control, to carry out work on any other equipment. | | |
| | Name & Designation: | Date: _____ |
| | Signature: _____ | Time: _____ |

| D. RETURN of PTW | | |
|---|--|-------------|
| 1 | Details of work done | |
| 2 | Restrictions/Changes if any on the equipment being returned to service | |
| 3 | CLEARANCE CERTIFICATE | |
| I hereby declare that all men, material and earthing have been withdrawn and all personnel warned that it is no longer safe to work on the equipment specified in this permit and all tools and additional earths are clear and equipment is ready for charging | | |
| | Name & Designation: | Date: _____ |
| | Signature: _____ | Time: _____ |

| E. CANCELLATION of PTW | | |
|-------------------------------|---|----------------------|
| 1 | PTW Cancelled and entry made on PTW register page no: | |
| 2 | Sequence of Normalization | 1. 2. 3. 4. |
| | Name & Designation: | Date: _____ |
| | Signature: _____ | Time: _____ |