| SITE COMPLETION CHECKLIST (SCC)<br>PLANT INTERFACING WORK(PIW)<br>(PRE-CABLING & INSTALLATION) | | | | | |
|---|---|---|---|---|---|
| **Doc No.** | **SCC PIW(PC)** | **Rev. No.** | **1** | **Date** | **5 JUNE 2020** |

**CONTRACT TITLE :**

**PEMBEKALAN, PEMASANGAN DAN PENGUJIAN FASILITI DISTRIBUTION AUTOMATION SECARA BERSEPADU (INTEGRATED INTER-CHANGEABLE DA), DISTRIBUTION NETWORK DIVISION, TNB – MAINHEAD B: SELANGOR (TERMASUK PUTRAJAYA/CYBERJAYA)**

| | | |
|---|---|---|
| **CONTRACT NO. :** | **TNB768/2024** | |
| **CONTRACTOR :** | **EMPIRE RHEA** | |
| **DATE :** | **02-03-2026** | |
| **SUBSTATION NAME :** | **PE DAIWA JLN 33/52** | |
| **FUNCTIONAL LOCATION :** | **BSAM/PCE/J02186** | |
| **SUBZONE :** | **SHAH ALAM** | |
| **STATE :** | **SELANGOR** | |
| **WORK TYPE :**<br>**(Tick "✓" whichever applicable)** | | **Plant Interfacing Work (PIW) VCB** |
| | | **Plant Interfacing Work (PIW) M-RMU** |
| | ✓ | **INTEGRATED DA VCB** |
| | | **INTEGRATED DA M-RMU** |

# SITE COMPLETION CHECKLIST (SCC)
# PLANT INTERFACING WORK(PIW)
## (PRE-CABLING & INSTALLATION)

TENAGA NASIONAL

| Doc No. | SCC PIW(PC) | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

**A1. SCC PIW (DURING PRE-CABLING & INSTALLATION)**

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

Check boxes as follows: (✓) OK NI : Need Improvement (Pls. give comments at 'Remark' column)

| No. | Description | OK | NI | REMARKS |
|---|---|---|---|---|
| **1.** | **Visual Checks on RCB** | | | |
| i. | RCB cabinet is properly mounted & aligned at the wall / designated area. | ✓ | | |
| ii. | QR code / label is available inside RCB Cabinet. The information on QR label* is scanned & checked (according to SOW)<br>[* If available for this contract] | ✓ | | |
| iii. | All wirings to the terminal blocks are terminated tightly and terminal blocks are in good condition. | ✓ | | |
| iv. | All cables shall be properly glanded at the cable entry points using proper glanding and sealing (to ensure no space/gap between the cable entry points/glands and the panel) | ✓ | | |
| v. | For RCB Multi-pin with Interconnector cables, inspect condition of pins (not bended/broken/'sub-merged' in the holder). | ✓ | | |
| vi. | For RCB Multi-pin with Interconnector cables, check pin no. assignment with signal arrangement. | ✓ | | |
| vii. | For RCB Multi-pin with Interconnector cables, check DC Earth fault to Ground. | ✓ | | |
| viii. | For RCB Multi-pin with Interconnector cables, check cable support to avoid stress on the connector side. | ✓ | | |
| ix. | For RCB Multi-pin with Interconnector cables, ensure cables on both ends are connected to the correct feeder number. | ✓ | | |
| **2.** | **Visual and Physical Checks on Cablings and Terminations** | | | |
| i. | All non-armoured cables shall be installed in rigid high impact PVC conduits, neatly secured in position and adequately supported where necessary in an approved manner. | ✓ | | |
| ii. | The size of the PVC conduit shall be 25 mm in diameter and the colour of the conduit and fittings shall be orange. The conduits shall be fixed by means of saddles secured rigidly at intervals not exceeding 750 mm. | ✓ | | |
| iii. | Cable supports/brackets/elbows shall be installed at intervals not greater than 1500 mm for vertical runs and not greater than 1000 mm for horizontal runs. The brackets shall be derusted, finished in a primer and coated with standard orange enamel. The brackets/elbows shall not be painted. | ✓ | | |
| iv. | For armoured cables, cable supports, elbows, cleats, trays shall be used. All materials must be of galvanised type (of at least 1.2 mm in thickness). | ✓ | | |
| v. | For each termination from VCB / MRMU / EFI / Battery Charger / AC point to RCB:<br>(i) Core number shall be marked using ferrules (ferrules shall be of one character slip-on interlocking type only).<br>(ii) Diameter of interlocking ferrules shall be 2.5 mm & preferred brand is Partex.<br>(iii) "TRIP" ferrules (red colour) for trip circuits. No two or more plant panels shall share a common/same cable.All cables shall be properly labelled at both ends as per signal arrangement drawings using heat shrinkable labels or cable tags. | ✓ | | |
| vi. | No two or more plant panels shall share a common/same cable. | ✓ | | |

**Observations:**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
| SHALAHUDDIN (808734-A) EMPIRE RHEA (M) SDN BHD | |
| Name: SHALAHUDDIN | Name: |
| Date: 02-03-2026 | Date: 02-03-2026 |

# SITE COMPLETION CHECKLIST (SCC)
# PLANT INTERFACING WORK(PIW)
# (PRE-CABLING & INSTALLATION)

TENAGA NASIONAL

| Doc No. | SCC PIW(PC) | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

**A1. SCC PIW (DURING PRE-CABLING & INSTALLATION)**

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

Check boxes as follows: (✓) OK  NI : Need Improvement (Pls. give comments at 'Remark' column)

| No. | Description | OK | NI | REMARKS |
|---|---|---|---|---|
| **3.** | **Visual Checks on Installations** | | | |
| **a.** | **Battery Charger (including Batteries)** | | | |
| i. | Mounted in stable condition & aligned at the designated area. | ✓ | | |
| ii. | Use of proper Torque Wrench (11 Nm) for installation of batteries | ✓ | | |
| iii. | QR Label Information is available inside Battery Charger Panel. Scanned and checked information on QR label* (according to SOW). [* If available for this contract] | ✓ | | |
| **b.** | **Earth Fault Indicators (EFIs)** | | | |
| i. | Installed on a mounting board, at designated area with cable markings for each EFI. | ✓ | | |
| ii. | Not more than 2 nos. of EFIs on the mounting board. | ✓ | | |
| **4.** | **Site Drawings & Tests** | | | |
| i. | Hardcopy of Approved Drawings<br>- Documents are available & placed inside RCB / RTU panel.<br>[Note: Any changes to the drawings shall be updated in softcopy and passed to TNB as As-built drawings]. | ✓ | | |
| ii. | Hardcopy of **Mastersheet & Wiring List (Working Copies)**<br>- Any changes shall be updated/written in the Mastersheet & Wiring List & **verified, signed and stamped by supervisor / representative**<br>- Documents are available & placed inside RCB / RTU panel. | ✓ | | |

**Observations:**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
| SHALAHUDDIN (808734-A) EMPIRE RHEA (M) SDN BHD | |
| Name: SHALAHUDDIN | Name: |
| Date: 02-03-2026 | Date: 02-03-2026 |

**4.6.5 Pin Assignments**

Check boxes as follows: (✓) OK NI : Need Improvement (Pls. give comments at 'Remark' column)

| Pin No | Signal Arrangement | Group | REMARKS |
|---|---|---|---|
| 1 | Earth point | | Common point to earth the connector, RCB & switchgear |
| 2 | Gas low alarm indication point (if applicable) | Alarm | Voltage free contact. Closes when Gas Low Alarm operated w.r.t Common at Pin 15 |
| 3 | Spare | | Spare |
| 4 | LBS/CB Open Indication point | Status | +ve wetted for Aux Relay coil w.r.t Common at Pin 8 |
| 5 | LBS/CB Close Indication point | | +ve wetted for Aux Relay coil w.r.t Common at Pin 8 |
| 6 | ES Open Indication point | | +ve wetted for Aux Relay coil w.r.t Common at Pin 8 |
| 7 | ES Close Indication point | | +ve wetted for Aux Relay coil w.r.t Common at Pin 8 |
| 8 | Common from plant (Return for Pin 4, 5, 6 & 7) | | -ve wetted from plant |
| 9 | Local/Remote Indication point | | Voltage free contact. Close when in Remote Position w.r.t Common at Pin 15 |
| 10 | Trip circuit supervision alarm indication point | Alarm | Voltage free contact. Close when TCS operated w.r.t Common at Pin 15 |
| 11 | Overcurrent trip indication point | | Voltage free contact. Close when OC operated w.r.t Common at Pin 15 |
| 12 | Earthfault trip indication point | | Voltage free contact. Close when EF operated w.r.t Common at Pin 15 |
| 13 | Protection relay common alarm indication point | | Voltage free contact. Close when Protection relay common alarm (IRF + Comm Fail for CD) operated w.r.t Common at Pin 15 |
| 14 | Current Differential trip indication | | Voltage free contact. Close when Current Diff operated w.r.t Common at Pin 15 |
| 15 | Common from plant (Return for Pin 9–14) | | Voltage free contact common |
| 16 | Close Command common | Control | Close Command common |
| 17 | Close Command from Remote/Supervisory | | HDIR contact w.r.t Common at Pin 16 for Close command |
| 18 | Open Command common | | Open Command common |
| 19 | Close Command from Remote/Supervisory | | HDIR contact w.r.t Common at Pin 18 for Close command |

**Observations:**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
| SHALAHUDDIN (808734-A) EMPIRE RHEA (M) SDN BHD | |
| Name: SHALAHUDDIN | Name: |
| Date: 02-03-2026 | Date: 02-03-2026 |

**SITE COMPLETION CHECKLIST (SCC)**
**PLANT INTERFACING WORK(PIW)**
**(PRE-CABLING & INSTALLATION)**

TENAGA NASIONAL

| Doc No. | SCC PIW(PC) | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

**A2. PICTURES (BEFORE & AFTER DURING PRE-CABLING & INSTALLATION)**

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

**BEFORE INSTALLATION**

| | | |
|---|---|---|
| | | |
| OVERALL PICTURE OF SUBSTATION OUTER WALL (WITH SUBSTATION NAME) | OVERVIEW OF SWITCHGEAR (WITHOUT PRE-CABLING) | DESIGNATED SPACE/WALL FOR REMOTE CONTROL BOX INSTALLATION |
| | | |
| DESIGNATED SPACE/WALL FOR BATTERY CHARGER INSTALLATION | EXISTING EFI(s) OR DESIGNATED SPACE/WALL FOR EFI INSTALLATION | EXISTING EFI(s) OR DESIGNATED SPACE/WALL FOR EFI INSTALLATION SECOND PIC (IF ANY) |
| | | |
| | | |

| SITE COMPLETION CHECKLIST (SCC)<br>PLANT INTERFACING WORK(PIW)<br>(PRE-CABLING & INSTALLATION) | TENAGA NASIONAL |
|---|---|

| Doc No. | SCC PIW(PC) | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

**A2. PICTURES (BEFORE & AFTER DURING PRE-CABLING & INSTALLATION)**

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

**AFTER INSTALLATION**

| | | |
|---|---|---|
| | | |
| OVERALL PICTURE OF SUBSTATION OUTER WALL (WITH SUBSTATION NAME) | OVERVIEW OF SWITCHGEAR (WITH COMPLETED PRE-CABLING) | REMOTE CONTROL BOX (AFTER INSTALLATION) |
| | | |
| BATTERY CHARGER (AFTER INSTALLATION) | EFI(s) (AFTER INSTALLATION) | EFI(s) (AFTER INSTALLATION) SECOND PICTURE (IF ANY) |
| | | |
| | | |

| SITE COMPLETION CHECKLIST<br>PLANT INTERFACING WORK(PIW)<br>(SHUTDOWN) | | | TENAGA NASIONAL | | |
|---|---|---|---|---|---|
| **Doc No.** | **SCC PIW(SD)** | **Rev. No.** | **1** | **Date** | **5 JUNE 2020** |

**CONTRACT TITLE :**

**PEMBEKALAN, PEMASANGAN DAN PENGUJIAN FASILITI DISTRIBUTION AUTOMATION SECARA BERSEPADU (INTEGRATED INTER-CHANGEABLE DA), DISTRIBUTION NETWORK DIVISION, TNB – MAINHEAD B: SELANGOR (TERMASUK PUTRAJAYA/CYBERJAYA)**

| | | |
|---|---|---|
| **CONTRACT NO. :** | **TNB768/2024** | |
| **CONTRACTOR :** | **EMPIRE RHEA** | |
| **DATE :** | **12-04-2026** | |
| **SUBSTATION NAME :** | **PE DAIWA JLN 33/52** | |
| **FUNCTIONAL LOCATION :** | **BSAM/PCE/J02186** | |
| **SUBZONE :** | **SHAH ALAM** | |
| **STATE :** | **SELANGOR** | |
| **WORK TYPE :**<br>**(Tick "✓" whichever applicable)** | | **Plant Interfacing Work (PIW) VCB** |
| | | **Plant Interfacing Work (PIW) M-RMU** |
| | ✓ | **INTEGRATED DA VCB** |
| | | **INTEGRATED DA M-RMU** |

# SITE COMPLETION CHECKLIST
# PLANT INTERFACING WORK(PIW)
# (SHUTDOWN)

TENAGA NASIONAL

| Doc No. | SCC PIW(SD) | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

**A1. SITE COMPLETION CHECKLIST FOR PLANT INTERFACING WORK (SHUTDOWN)**

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

Check boxes as follows: (✓) OK NI : Need Improvement (Pls. give comments at 'Remark' column)

| No. | Description | OK | NI | REMARKS |
|---|---|---|---|---|
| **1.** | **Visual Checks on RCB** | | | |
| i. | Printed stencils (black text on white, with laminated tape) are completed and put for station name / numberings at:<br>• Remote Control Box (RCB)'s Door Panel<br>• Link numbers for feeders in the RCB | ✓ | | |
| ii. | SCADA-ready Stickers are sticked next to Local/Remote Switches | N/A | | |
| iii. | All feeders' labellings tally with switchgears at site. | ✓ | | |
| iv. | All Local/Remote switches are at Remote position at switchgears | ✓ | | |
| v. | All non-armoured cables (including EFI CT cable) shall be installed in rigid high impact PVC conduits, neatly secured in position and adequately supported where necessary in an approved manner. | ✓ | | |
| vi. | All wirings to the terminal blocks are wired according to Cable Schedule, terminated tightly and terminal blocks are in good condition. | ✓ | | |
| vii. | All cables shall be properly glanded at the cable entry points using proper glanding and sealing (to ensure no space/gap between the cable entry points/glands and the panel) | ✓ | | |
| **2.** | **Visual Checks on Installations** | | | |
| **a.** | **Battery Charger (including Batteries)** | | | |
| i. | All wirings to the terminal blocks are terminated tightly and terminal blocks are in good condition. | ✓ | | |
| ii. | Relevant Stickers for Battery Charger are available. | ✓ | | |
| iii. | All tests for Battery Charger are conducted & Test results recorded in Test Forms accordingly. | ✓ | | |
| **b.** | **Earth Fault Indicators (EFIs)** | | | |
| i. | Printed stencils (black text on white, with laminated tape) are available for numbering on the mounting board. | ✓ | | |
| ii. | EFI CT cables from EFI to Switchgears are laid, terminated & clamped. | ✓ | | |
| **3.** | **Site Drawings & Tests** | | | |
| i. | Hardcopy of Approved Drawings<br>- Documents are available & placed inside RCB / RTU panel.<br>[Note: Any changes to the drawings shall be **updated in softcopy** and passed to TNB as As-built drawings]. | ✓ | | |
| ii. | Hardcopy of **Mastersheet & Wiring List (Working Copies)**<br>- Any changes shall be updated/written in the Mastersheet & Wiring List & **verified, signed and stamped by supervisor / representative**<br>- Documents are available & placed inside RCB / RTU panel. | ✓ | | |
| iii. | Check & verify all necessary tests are performed as required & have passed. | ✓ | | |

**Observations:**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
| SHALAHUDDIN (808734-A) EMPIRE RHEA (M) SDN BHD | |
| Name: SHALAHUDDIN | Name: |
| Date: 12-04-2026 | Date: 12-04-2026 |

# SITE COMPLETION CHECKLIST
# PLANT INTERFACING WORK(PIW)
# (SHUTDOWN)

TENAGA NASIONAL

| Doc No. | SCC PIW(SD) | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

**A1. SCC PIW (DURING PRE-CABLING & INSTALLATION)**

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Remote Control Box | Brand | MULTIPIN ANZECO | | | | |
| | Type | Multipin | ✓ | Conventional | | |
| | Serial Number | RCB 1 Serial Number | RCB 0946 | | | |
| | | RCB 2 Serial Number | | | | |
| | | RCB 3 Serial Number | | | | |
| Battery Charger | Brand | BERKAT INSAF | | | | |
| | Serial Number | B23534 | | | | |
| Earth Fault Indicator | Serial Number | EFI-1: | 1631711 | EFI-6: | | EFI-11: |
| | | EFI-2: | X19509 | EFI-7: | | EFI-12: |
| | | EFI-3: | | EFI-8: | | EFI-13: |
| | | EFI-4: | | EFI-9: | | EFI-14: |
| | | EFI-5: | | EFI-10: | | EFI-15: |
| Switchgear | Brand | TOSHIBA | | | | |
| | Configuration: | 3S | | | | |

**Observations:**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
| SHALAHUDDIN (808734-A) EMPIRE RHEA (M) SDN BHD | |
| Name: SHALAHUDDIN | Name: |
| Date: 12-04-2026 | Date: 12-04-2026 |

| SITE COMPLETION CHECKLIST<br>PLANT INTERFACING WORK(PIW)<br>(SHUTDOWN) | TENAGA NASIONAL |
|---|---|

| Doc No. | SCC PIW(SD) | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

Note: Please sketch the building layout and the location of:

a. RCB panel

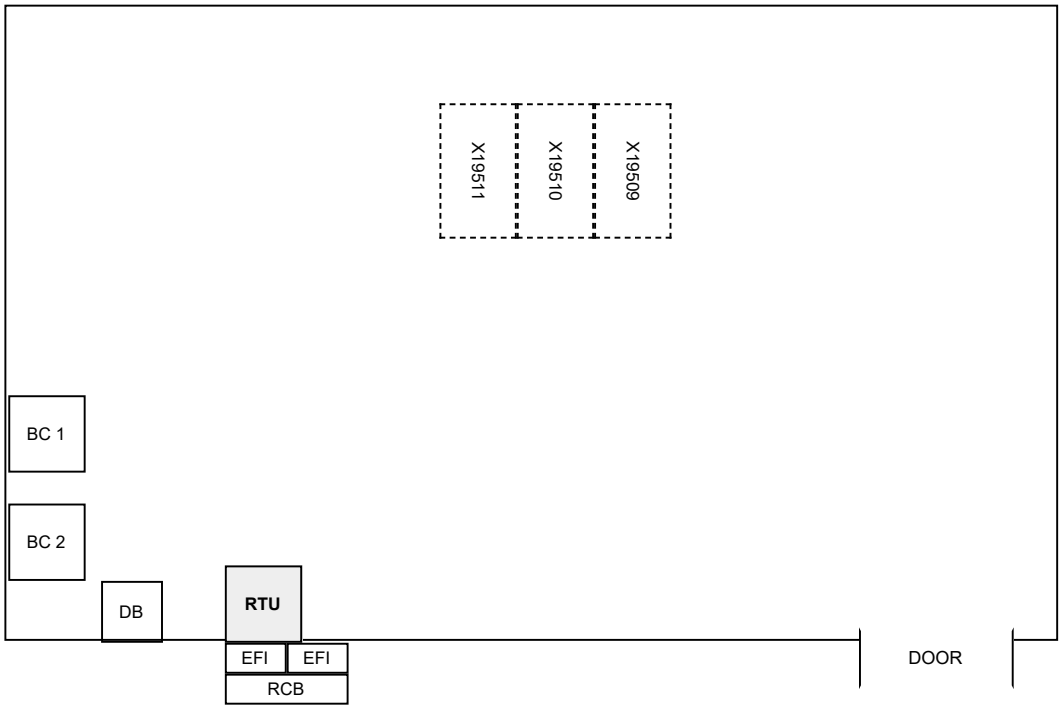
b. Battery Charger

c. EFIs location

d. Switchgear Panel

e. RTU Panel

**SITE DRAWING:**



| SITE ACCEPTANCE TEST (SAT)<br>PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN | | | | | |
|---|---|---|---|---|---|
| **Doc No.** | **SAT PIW - VCB** | **Rev. No.** | **1** | **Date** | **5 JUNE 2020** |

**CONTRACT TITLE :**

**PEMBEKALAN, PEMASANGAN DAN PENGUJIAN FASILITI DISTRIBUTION AUTOMATION SECARA BERSEPADU (INTEGRATED INTER-CHANGEABLE DA), DISTRIBUTION NETWORK DIVISION, TNB – MAINHEAD B: SELANGOR (TERMASUK PUTRAJAYA/CYBERJAYA)**

| | |
|---|---|
| **CONTRACT NO. :** | **TNB768/2024** |
| **CONTRACTOR :** | **EMPIRE RHEA** |
| **DATE :** | **12-04-2026** |
| **SUBSTATION NAME :** | **PE DAIWA JLN 33/52** |
| **FUNCTIONAL LOCATION :** | **BSAM/PCE/J02186** |
| **SUBZONE :** | **SHAH ALAM** |
| **STATE :** | **SELANGOR** |

# SITE ACCEPTANCE TEST (SAT)
# PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN

TENAGA NASIONAL

| Doc No. | SAT PIW - VCB | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

## A4. TERMINATION CONTINUITY TEST (RCB MULTIPIN ANZECO)

4. Conduct Point-to-point Cable Termination Continuity Tests.
5. Conduct Short to Ground (Leakage) test for each connector pin.
6. Record test results in **[1] Termination Continuity Test Sheet**.

| **[1]** | **TERMINATION CONTINUITY TEST SHEET** |
|---|---|
| **Feeder No.:** | X19511 |
| **Feeder Name:** | PENGGUNA 11KV |

19 cores, 1.5 mm sq, armoured (Alarm & Control cables) *Note: Please add/edit according to station's requirement

| Cable No. | Core No. | Signal | From | To | Termination Continuity Test | Short to Ground (Leakage) Test | REMARKS |
|---|---|---|---|---|---|---|---|
| LBS-1 | 1 | Earth | RCB | SG PANEL | ✓ | Not applicable | |
| LBS-1 | 2 | Gas Low Alarm | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 3 | Spare | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 4 | LBS Status Open | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 5 | LBS Status Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 6 | Earth Switch Status Open | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 7 | Earth Switch Status Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 8 | Common Return Pin (4,5,6,7) | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 9 | Local / Remote Indication | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 10 | Trip Circuit Supervision | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 11 | Overcurrent | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 12 | Earth Fault | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 13 | IRF & Comm Fail | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 14 | Current Diff / Spare | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 15 | Common Return Pin (9–14) | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 16 | Command From R/S Common | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 17 | Command From R/S Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 18 | Command From R/S Common | RCB | SG PANEL | ✓ | ✓ | |
| LBS-1 | 19 | Command From R/S Open | RCB | SG PANEL | ✓ | ✓ | |

2-pair, twisted, 1.5 mm sq, armoured (Analog cables)

| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| 1B | | Amp + | RCB | SG PANEL | ✓ | |
| 1B | | Amp - | RCB | SG PANEL | ✓ | |
| 1B | | Spare | RCB | SG PANEL | | |
| 1B | | Spare | RCB | SG PANEL | | |

4 cores, 1.0 mm sq, non-armoured (EFI signal cables)

| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| EFI1 | 1 | Common | EFI | RCB | ✓ | |
| EFI1 | 2 | EFI Indication | EFI | RCB | ✓ | |
| EFI1 | 3 | CO-Common | EFI | RCB | ✓ | |
| EFI1 | 4 | EFI Reset | EFI | RCB | ✓ | |

**Test Observations:**

**Test Result: PASS ☑ FAIL ☐**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
|  | |
| Name: SHALAHUDDIN | Name: |
| Date: 12-04-2026 | Date: 12-04-2026 |

# SITE ACCEPTANCE TEST (SAT)
# PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN

TENAGA NASIONAL

| Doc No. | SAT PIW - VCB | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

## A4. TERMINATION CONTINUITY TEST (RCB MULTIPIN ANZECO)

4. Conduct Point-to-point Cable Termination Continuity Tests.
5. Conduct Short to Ground (Leakage) test for each connector pin.
6. Record test results in **[1] Termination Continuity Test Sheet**.

| **[1]** | **TERMINATION CONTINUITY TEST SHEET** |
|---|---|
| **Feeder No.:** | X19510 |
| **Feeder Name:** | TEPAT DAMAI |

19 cores, 1.5 mm sq, armoured (Alarm & Control cables) *Note: Please add/edit according to station's requirement

| Cable No. | Core No. | Signal | From | To | Termination Continuity Test | Short to Ground (Leakage) Test | REMARKS |
|---|---|---|---|---|---|---|---|
| LBS-2 | 1 | Earth | RCB | SG PANEL | ✓ | Not applicable | |
| LBS-2 | 2 | Gas Low Alarm | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 3 | Spare | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 4 | LBS Status Open | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 5 | LBS Status Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 6 | Earth Switch Status Open | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 7 | Earth Switch Status Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 8 | Common Return Pin (4,5,6,7) | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 9 | Local / Remote Indication | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 10 | Trip Circuit Supervision | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 11 | Overcurrent | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 12 | Earth Fault | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 13 | IRF & Comm Fail | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 14 | Current Diff / Spare | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 15 | Common Return Pin (9–14) | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 16 | Command From R/S Common | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 17 | Command From R/S Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 18 | Command From R/S Common | RCB | SG PANEL | ✓ | ✓ | |
| LBS-2 | 19 | Command From R/S Open | RCB | SG PANEL | ✓ | ✓ | |

2-pair, twisted, 1.5 mm sq, armoured (Analog cables)

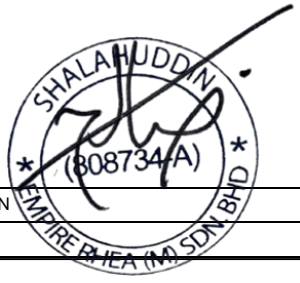
| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| 2B | | Amp + | RCB | SG PANEL | ✓ | |
| 2B | | Amp - | RCB | SG PANEL | ✓ | |
| 2B | | Spare | RCB | SG PANEL | | |
| 2B | | Spare | RCB | SG PANEL | | |

4 cores, 1.0 mm sq, non-armoured (EFI signal cables)

| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| EFI2 | 1 | Common | EFI | RCB | ✓ | |
| EFI2 | 2 | EFI Indication | EFI | RCB | ✓ | |
| EFI2 | 3 | CO-Common | EFI | RCB | ✓ | |
| EFI2 | 4 | EFI Reset | EFI | RCB | ✓ | |

**Test Observations:**

**Test Result: PASS ☑ FAIL ☐**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
|  | |
| Name: SHALAHUDDIN | Name: |
| Date: 12-04-2026 | Date: 12-04-2026 |

# SITE ACCEPTANCE TEST (SAT)
# PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN

TENAGA NASIONAL

| Doc No. | SAT PIW - VCB | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

## A4. TERMINATION CONTINUITY TEST (RCB MULTIPIN ANZECO)

4. Conduct Point-to-point Cable Termination Continuity Tests.
5. Conduct Short to Ground (Leakage) test for each connector pin.
6. Record test results in **[1] Termination Continuity Test Sheet**.

| **[1]** | **TERMINATION CONTINUITY TEST SHEET** |
|---|---|
| **Feeder No.:** | X19509 |
| **Feeder Name:** | GALVAPOLE NO 2 |

19 cores, 1.5 mm sq, armoured (Alarm & Control cables) *Note: Please add/edit according to station's requirement

| Cable No. | Core No. | Signal | From | To | Termination Continuity Test | Short to Ground (Leakage) Test | REMARKS |
|---|---|---|---|---|---|---|---|
| LBS-3 | 1 | Earth | RCB | SG PANEL | ✓ | Not applicable | |
| LBS-3 | 2 | Gas Low Alarm | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 3 | Spare | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 4 | LBS Status Open | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 5 | LBS Status Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 6 | Earth Switch Status Open | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 7 | Earth Switch Status Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 8 | Common Return Pin (4,5,6,7) | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 9 | Local / Remote Indication | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 10 | Trip Circuit Supervision | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 11 | Overcurrent | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 12 | Earth Fault | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 13 | IRF & Comm Fail | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 14 | Current Diff / Spare | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 15 | Common Return Pin (9–14) | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 16 | Command From R/S Common | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 17 | Command From R/S Close | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 18 | Command From R/S Common | RCB | SG PANEL | ✓ | ✓ | |
| LBS-3 | 19 | Command From R/S Open | RCB | SG PANEL | ✓ | ✓ | |

2-pair, twisted, 1.5 mm sq, armoured (Analog cables)

| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| 3B | | Amp + | RCB | SG PANEL | ✓ | |
| 3B | | Amp - | RCB | SG PANEL | ✓ | |
| 3B | | Spare | RCB | SG PANEL | | |
| 3B | | Spare | RCB | SG PANEL | | |

4 cores, 1.0 mm sq, non-armoured (EFI signal cables)

| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| EFI3 | 1 | Common | EFI | RCB | ✓ | |
| EFI3 | 2 | EFI Indication | EFI | RCB | ✓ | |
| EFI3 | 3 | CO-Common | EFI | RCB | ✓ | |
| EFI3 | 4 | EFI Reset | EFI | RCB | ✓ | |

**Test Observations:**

**Test Result: PASS ☑ FAIL ☐**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
| SHALAHUDDIN (808734-A) * EMPIRE RHEA (M) SDN BHD * | |
| Name: SHALAHUDDIN | Name: |
| Date: 12-04-2026 | Date: 12-04-2026 |

# SITE ACCEPTANCE TEST (SAT)
# PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN

TENAGA NASIONAL

| Doc No. | SAT PIW - VCB | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

## A1. TERMINATION CONTINUITY TEST (RCB MULTIPIN ANZECO)

1. Conduct Point-to-point Cable Termination Continuity Tests.
2. Record test results in [1] Termination Continuity Test Sheet.

| [1] | TERMINATION CONTINUITY TEST SHEET |
|---|---|
| **PE Name:** | PE DAIWA JLN 33/52 |

4 cores, 4 mm sq (coloured armoured) - AC cable for Battery Charger

| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| AC-BC1 | RED | Line | DB | BC | ✓ | |
| AC-BC1 | BLUE | Neutral | DB | BC | ✓ | |
| AC-BC1 | YELLOW | Earth | DB | BC | ✓ | |
| AC-BC1 | BLACK | Spare | DB | BC | ✓ | |

4 cores, 1.5 mm sq, armoured (Battery Charger alarms)

| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| BC1 | 1 | Common | BC | RCB | ✓ | |
| BC1 | 2 | Battery Charger Alarm 1 | BC | RCB | ✓ | |
| BC1 | 3 | Common | BC | RCB | ✓ | |
| BC1 | 4 | AC Fail | BC | RCB | ✓ | |
| BC2 | 1 | Common | BC | RCB | ✓ | |
| BC2 | 2 | Battery Charger Alarm 1 | BC | RCB | ✓ | |
| BC2 | 3 | Common | BC | RCB | ✓ | |
| BC2 | 4 | AC Fail | BC | RCB | ✓ | |

2 cores, 2.5 mm sq, armoured (DC Cable)

| Cable No. | Core No. | Signal | From | To | Test Result | REMARKS |
|---|---|---|---|---|---|---|
| BC1 - RCB | RED | +30VDC | BC | RCB | ✓ | |
| BC1 - RCB | BLACK | -30VDC | BC | RCB | ✓ | |

**Test Observations:**

**Test Result: PASS ☑ FAIL ☐**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
| SHALAHUDDIN (808734-A) EMPIRE BHEA (M) SDN. BHD | |
| Name: SHALAHUDDIN | Name: |
| Date: 12-04-2026 | Date: 12-04-2026 |

# SITE ACCEPTANCE TEST (SAT)
# PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN

TENAGA NASIONAL

| Doc No. | SAT PIW - VCB | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

## A2. RCB CONTROL OPERATION INTERLOCK TEST

1. Conduct Point-to-point Cable Termination Continuity Tests.
2. Record test results in [1] Termination Continuity Test Sheet.

| | | | | |
|---|---|---|---|---|
| [2] | RCB CONTROL OPERATION INTERLOCK TEST SHEET | | | |
| **PE Name:** | PE DAIWA JLN 33/52 | | | |
| **RCB brand:** | MULTIPIN ANZECO | | | |
| **RCB type:** | RCB Conventional | | RCB Multi-pin | ✓ |

**Test Conditions:**

i. The Earth Switch is at ON position (at all times) during the tests.
ii. The test is conducted with the breaker at half-racked in position at the VCB switchgear cubicle (Test Position)
iii. The breaker Test Plug is inserted into the switchgear cubicle connector to activate the Control Operation..
iv. To connect 30 Vdc supply for status indication change at RCB (from dry contact to wet contact)

1. Test Conducted at the Switchgear:

| Breaker Local/Remote Position | Breaker Trip/Close Switch | | Test Result ("✓" Passed / "X" Failed) |
|---|---|---|---|
| | TRIP | CLOSE | |
| LOCAL | ✓ | ✓ | ✓ |
| REMOTE | X | X | ✓ |

2. Test Conducted at the RCB

| Breaker L/R Position | RCB R/S Position | RCB Trip/Close Switch | | Test Result (" ✓ " - Passed / " X " - Failed) |
|---|---|---|---|---|
| | | TRIP | CLOSE | |
| LOCAL | REMOTE | X | X | ✓ |
| LOCAL | SUPERVISORY | X | X | ✓ |
| REMOTE | REMOTE | ✓ | ✓ | ✓ |
| REMOTE | SUPERVISORY | X | X | ✓ |

**Test Observations:**

**Test Result: PASS ☑ FAIL ☐**

| Checks conducted by:<br>Contractor's Signature & Stamp: | Verified by:<br>TNB's Representative Signature & Stamp: |
|---|---|
| SHALAHUDDIN (808734-A) * EMPIRE RHEA (M) SDN BHD * | |
| Name: SHALAHUDDIN | Name: |
| Date: 12-04-2026 | Date: 12-04-2026 |

TENAGA NASIONAL BERHAD (200866-W)

**ENGR-750-12-WI-11-Borang01**

# Nama Aktiviti: PENGUJIAN MULATUGAS SISTEM 30VDC LOW MAINTENANCE

| | | | |
|---|---|---|---|
| **Pencawang** | : PE DAIWA JLN 33/52 | **Jenama charger / model** | : BERKAT INSAF |
| **Tarikh Mulatugas** | : 2026-04-12 | **Serial no charger** | : B23534 |
| **Bilangan Charger** | : 1 | **Bulan/Tahun Penghantaran** | : 2025-11 |
| **Kegunaan DC** | : RTU | **Jenama bateri / model** | : SAFT UP1M40-4 |
| **Jika VCB, Bilangan VCB** | : | **Bulan/Tahun Pembuatan** | : 2025-08 |

| Activiti | Keterangan Aktiviti | | Tandakan (✓) |
|---|---|---|---|
| 1 | Pastikan sistem DC telah siap dipasang kecuali kabel dari pengecas ke bateri & pengecas ke beban. | | ✓ |
| 2 | Pastikan semua MCB pada pengecas bateri dalam keadaan terbuka (OFF). | | ✓ |
| **Activiti** | **Keterangan Aktiviti** | **Julat Bacaan** | **Ambil Bacaan** |
| 3 | Semak bacaan voltan pembekal masuk AC (L-N) pada terminal blok pengecas bateri. | 216 - 252 Vac | **240VAC** |
| **Activiti** | **Keterangan Aktiviti** | | **Tandakan (✓)** |
| 4 | Pastikan Suis Mode berada dalam kedudukan Manual. Hidupkan (ON) MCB AC, Bateri & Beban. | | ✓ |
| **Activiti** | **Keterangan Aktiviti** | **Julat Bacaan** | **Ambil Bacaan** |
| 5 | Pastikan LED Manual Float menyala. Ukur voltan pada terminal blok ke beban. | 27 - 31.5 Vdc (terminal positive ke negative) | **29.9V** |
| 6 | Pusingkan suis ke Boost. Pastikan LED Manual Boost menyala. Ukur voltan pada terminal blok ke beban. | 27 - 31.5 Vdc (terminal positive ke negative) | **30.2V** |
| **"Jika julat voltan untuk Float atau Boost tidak dipatuhi,matikan (OFF) semua MCB. Laporkan dalam Sistem Maklumbalas Bahan(SMB) & hubungi pihak pembekal untuk pembaikan segera ditapak. "** | | | |
| **Activiti** | **Keterangan Aktiviti** | | **Tandakan (✓)** |
| 7 | Pusing semula suis ke Float. Pastikan LED Manual Float menyala. | | ✓ |
| **Activiti** | **Keterangan Aktiviti** | | **Tandakan (✓)** |
| 8 | **TEMPERATURE COMPENSATION (Float CHARGE MODE) Rekodkan juga bacaan & keputusan aktiviti 8(i) hingga 8(iv) pada pelekat mulatugas pada pintu pengecas.** | i) Ambil bacaan voltan pengecas bateri pada terminal blok ke bateri. | |
| | | ii) Rekod bacaan suhu pada paparan LCD. | |
| | | iii) Rujuk Jadual Temperature Compensation pada pintu pengecas & rekodkan voltan Float Min & Max. — MIN | |
| | | iii) Rujuk Jadual Temperature Compensation pada pintu pengecas & rekodkan voltan Float Min & Max. — MAX | |
| | | iv)Adakah voltan 8(i) dalam julat voltan Float Min & Max? Ya(✓) atau Tidak(✗) | ✓ |
| **Activiti** | **Keterangan Aktiviti** | | **Tandakan (✓)** |
| 9 | Pusingkan suis ke Boost. Pastikan LED Manual Boost menyala. | | ✓ |
| **Activiti** | **Keterangan Aktiviti** | | **Tandakan (✓)** |
| 10 | **TEMPERATURE COMPENSATION (Boost CHARGE MODE) Rekodkan juga bacaan & keputusan aktiviti 10(i) hingga 10(iv) pada pelekat mulatugas pada pintu pengecas."** | i) Ambil bacaan voltan pengecas bateri pada terminal blok ke bateri. | |
| | | ii) Rekod bacaan suhu pada paparan LCD. | |
| | | iii) Rujuk Jadual Temperature Compensation pada pintu pengecas & rekodkan voltan Boost Min & Max. — MIN | |
| | | iii) Rujuk Jadual Temperature Compensation pada pintu pengecas & rekodkan voltan Boost Min & Max. — MAX | |
| | | iv)Adakah voltan 10(i) dalam julat voltan Boost Min & Max? Ya(✓) atau Tidak(✗) | ✓ |
| **"Jika julat voltan untuk Float atau Boost pada no 8(iv) & 10(iv) tidak dipatuhi, laporkan dalam Sistem Maklumbalas Bahan(SMB) & hubungi pihak pembekal untuk pembaikan segera ditapak. Jika julat voltan untuk Float & Boost dipatuhi, teruskan ke langkah seterusnya."** | | | |
| **Activiti** | **Keterangan Aktiviti** | | **Tandakan (✓)** |
| 11 | Matikan (OFF) MCB pada pengecas bateri ke bateri & beban. | | ✓ |
| 12 | Lengkapkan sambungan kabel dari pengecas ke bateri & pengecas ke beban. | | ✓ |
| 13 | Hidupkan (ON) semula MCB pada pengecas bateri ke bateri & beban. | | ✓ |
| 14 | Pusing suis Charger Selector Mode ke Manual & Boost. Pusing semula ke Auto. Pastikan LED Charger Auto Boost menyala. | | ✓ |
| **Pengecas akan bertukar ke Float secara Otomatik selepas 12 Jam.** | | | |

| | | | |
|---|---|---|---|
| | : SHALAHUDDIN | | |
| **Diuji Oleh** | | **Disahkan Oleh** | : |
| **Tarikh** | : 2026-04-12 | **Tarikh** | : 2026-04-12 |
| **Analisa/Catatan** | : | | |
| **Keputusan** | : LULUS | | |
| **Perlu Tindakan Lanjutan** | : TIDAK | | |
| **Tindakan Oleh** | : | | |
| **Tarikh** | : | | |

SHALAHUDDIN (808734-A) EMPIRE RHEA (M) SDN.BHD

TENAGA NASIONAL BERHAD
(200866-W)

# SENARAI SEMAK DAN UJIAN EFI UNTUK PROJEK DA / RECOMMISSION

| | | | |
|---|---|---|---|
| **Pencawang** | : PE DAIWA JLN 33/52 | | |
| **LITAR** | : INCOMING X19510 | OUTGOING | 1631700 |
| **NO. SIRI** | : 1631711 | OUTGOING | X19509 |
| **JENIS EFI** | : EMG | OUTGOING | EMG |

| No | Ujian | Incoming | Outgoing | Komen |
|---|---|---|---|---|
| 1 | Test Kelip. Adakah EFI berfungsi dengan baik? | **OK** | **OK** | Lakukan test dan reset pada EFI tersebut. Untuk EFI endau semak External Indicator. |
| 2 | Adakah terdapat **LV SUPPLY** (230V) tersambung pada EFI? | **OK** | **OK** | Untuk jenama Cableroll 2310, jika tiada LV dipasang, perlu OFF kan bit 6 & 7 |
| 3 | Bacaan bateri EFI : 3.6V Adakah bacaan voltan <3.0V? | **OK** | **OK** | Jika bacaan <3.0V bateri perlu ditukar |
| 4 | Ukurkan rintangan pada terminal CT pada EFI. Adakah CT yang terpasang pada kedudukan betul? | **OK** | **OK** | Sila lihat Lampiran 2 bagi contoh pemasangan CT yang betul. Nota: untuk menyemak penyambungan CT ke terminal EFI; bacaan dalam 20–30Ω atau kurang dari 100Ω (Cableroll & Endau) / 2.4kΩ (EMG) |
| 5 | Jalankan ujian secondary current injection pada CT menggunakan set Bowdens | **OK** | **OK** | Satu lilitan adalah arus sebanyak 10 A |
| 6 | Gunakan buzzer dan probe pada NO | **OK** | **OK** | Ada continuity jika jalankan current injection. Perlu keluarkan jumper jika ada |

Tandakan 1 = Kedudukan bit pada DIP suis pada ON
Tandakan 0 = Kedudukan bit pada DIP suis pada OFF
(sila rujuk Lampiran 4 untuk definisi setiap bit)

| Endau | | |
|---|---|---|
| **BIT NO** | **INC** | **OUT** |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |

| Soule Bardin | | | |
|---|---|---|---|
| | **BIT NO** | **INC** | **OUT** |
| **S1 DIP SUIS** | 1 | | |
| | 2 | | |
| | 3 | | |
| | 4 | | |
| **S2 DIP SUIS** | 1 | | |
| | 2 | | |
| | 3 | | |
| | 4 | | |
| | 5 | | |

| CableTroll | | | | | | |
|---|---|---|---|---|---|---|
| **BIT NO** | **INC** | **OUT** | | **Kedudukan** | **INC** | **OUT** |
| 1 | | | | 1 | | |
| 2 | | | | 2 | | |
| 3 | | | | 3 | | |
| 4 | | | | 4 | | |
| 5 | | | | 5 | | |
| 6 | | | | 6 | | |

| EMG Easi-R | | | | | | |
|---|---|---|---|---|---|---|
| **DIP SUIS 1 (ATAS)** | **INC** | **OUT** | | **DIP SUIS 1 (BAWAH)** | **INC** | **OUT** |
| 1 | 0 | 0 | | 1 | 0 | 0 |
| 2 | 0 | 0 | | 2 | 0 | 0 |
| 3 | 0 | 0 | | 3 | 1 | 1 |
| 4 | 1 | 1 | | 4 | 0 | 0 |
| 5 | 0 | 0 | | 5 | 0 | 0 |
| 6 | 1 | 1 | | 6 | 1 | 1 |

## SITE ACCEPTANCE TEST (SAT)
## PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN

TENAGA NASIONAL

| Doc No. | SAT PIW - VCB | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

**A2. PICTURES (BEFORE & AFTER DURING PRE-CABLING & INSTALLATION)**

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

| | | |
|---|---|---|
| | | |
| OVERALL PICTURE OF SUBSTATION OUTER WALL (WITH SUBSTATION NAME) | SAMPLE OF COMPLETED MULTI-CORE CABLE TERMINATION (AT SWITCHGEAR'S SIDE) | SAMPLE OF COMPLETED MULTI-CORE CABLE TERMINATION (INSIDE RCB) |
| | | |
| SAMPLE OF COMPLETED MULTI-CORE CABLE TERMINATION (INSIDE RCB) SECOND PICTURE (IF ANY) | SAMPLE OVERVIEW OF RCB'S SINGLE LINE DIAGRAM (COMPLETE WITH FEEDER NUMBERS) | SAMPLE OVERVIEW OF RCB'S SINGLE LINE DIAGRAM (COMPLETE WITH FEEDER NUMBERS) SECOND PICTURE (IF ANY) |
| | | |
| OVERALL PICTURE OF WIRING LIST INSIDE RCB PANEL | OVERALL PICTURE OF RCB SCHEMATIC DIAGRAM INSIDE RCB PANEL | RCB (COMPLETE WARRANTY STICKER) |

| SITE ACCEPTANCE TEST (SAT)<br>PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN | TENAGA NASIONAL |
|---|---|

| Doc No. | SAT PIW - VCB | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

**A2. PICTURES (BEFORE & AFTER DURING PRE-CABLING & INSTALLATION)**

| | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

| | | |
|---|---|---|
| | | |
| OVERVIEW OF EFI(s) AFTER INSTALLATION | OVERVIEW OF EFI(s) AFTER INSTALLATION SECOND PICTURE (IF ANY) | OVERVIEW OF EFI(s) AFTER INSTALLATION THIRD PICTURE (IF ANY) |
| | | |
| SAMPLE EFI'S CT CABLE AT SWITCHGEAR (AFTER CLAMPED) | SAMPLE EFI'S CT CABLE AT SWITCHGEAR (AFTER CLAMPED) SECOND PICTURE (IF ANY) | SAMPLE EFI'S CT CABLE AT SWITCHGEAR (AFTER CLAMPED) THIRD PICTURE (IF ANY) |
| | | |
| BATTERY CHARGER (COMPLETE WARRANTY STICKER) | OVERVIEW OF BATTERY CHARGER (COMPLETE WITH 30VDC LOW MAINTENANCE SYSTEM COMMISSIONING CHECKLIST) INSIDE BATTERY CHARGER | INDIVIDUAL EARTHING CONNECTIONS COMPLETED FOR I/O CABLES TO EARTH STUD AT RCB PANEL |

| SITE ACCEPTANCE TEST (SAT)<br>PLANT INTERFACING WORK (PIW) VCB - SHUTDOWN | TENAGA NASIONAL |
|---|---|

| Doc No. | SAT PIW - VCB | Rev. No. | 1 | Date | 5 JUNE 2020 |
|---|---|---|---|---|---|

| A2. PICTURES (BEFORE & AFTER DURING PRE-CABLING & INSTALLATION) | |
|---|---|
| **CONTRACT NO. :** | TNB768/2024 |
| **FUNCTIONAL LOCATION :** | BSAM/PCE/J02186 |
| **SUBSTATION NAME :** | PE DAIWA JLN 33/52 |

| | | |
|---|---|---|
| | | |
| INDIVIDUAL EARTHING CONNECTIONS COMPLETED FOR I/O CABLES TO EARTH STUD AT RCB PANEL SECOND PICTURE (IF ANY) | INDIVIDUAL EARTHING CONNECTIONS COMPLETED FOR I/O CABLES TO SWITCHGEAR TERMINATION BOX | INDIVIDUAL EARTHING CONNECTIONS COMPLETED FOR I/O CABLES TO SWITCHGEAR TERMINATION BOX SECOND PICTURE (IF ANY) |
| | | |
| | | |
| | | |
| | | |

**VERIFIED BY TNB**

**TNB Personnel:**
**Verified at:** 10-04-2026 16:40:46