## Test Case 1.4

Validated Requirements

19: Diagnostic Event due to undetected Line Voltage (Functional Requirement)

191: Display line voltage availability status on HMI (Functional Requirement)

Description

Checks that the status of line voltage availability of each car is sent to the HMI and that an event message is generated when line voltage is undetected for a period of time.

Categories

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| Formal Test | Yes |
| Execution Environment | Lab |
| V-Level | System |
| Function Group | Power Supply |
| Regression | No |
| Automated | No |
| Single Unit Operation Applicability | Yes |
| Multiple Unit Operation Applicability | No |

Pre-Condition

1. Set train to TS4 (TS12 if 3-car operation).

Test Case Design

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| --- | --- | --- |
| # | Action | Expected Result |
| 1 | Make sure line voltage is valid in all cars of the train.  Make sure line voltage is detected in all cars of the train. | On the VDU of the active cab, verify:  - on the Propulsion (Page 1) that the Line Voltage Available status is shown as 'Yes' for every car in the train.  - on the Active Events' Menu that NO event messages indicating the 'Line Voltage not detected' are active.  *Note: The Active Events and the Propulsion Page 1 can be seen in figures 19 and 28, respectively, of the DDU's Picture Model (rev. E).* |
| 2 | Set line voltage to 'Undetected' for every car in the train.  Wait 5 seconds. | On the VDU of the active cab, verify:  - on the Propulsion (Page 1) that the Line Voltage Available status is shown as 'No' for every car in the train.  - on the Active Events' Menu that an event message indicating the 'Line Voltage not detected' is active. |
| 3 | Set line voltage to 'Detected' for every car in the train. | On the VDU of the active cab, verify:  - on the Propulsion (Page 1) that the Line Voltage Available status is shown as 'Yes' for every car in the train.  - on the Active Events' Menu that NO event messages indicating the 'Line Voltage not detected' are active. |
| 4 | Set line voltage of C1DT to 'Undetected'. | On the VDU of the active cab, verify:  - on the Propulsion (Page 1) that the Line Voltage Available status is shown as 'No' only for C1DT.  - on the Active Events' Menu that NO event messages indicating the 'Line Voltage not detected' are active. |
| 5 | Set line voltage of C1DT to 'Detected'. | On the VDU of the active cab, verify:  - on the Propulsion (Page 1) that the Line Voltage Available status is shown as 'Yes' for every car in the train.  - on the Active Events' Menu that NO event messages indicating the 'Line Voltage not detected' are active. |
| 6 | Repeat actions 4-5 for line voltage detection of C1M1 in 6-car operation. | Verify that the appropriate expected results are set. |
| 7 | Repeat actions 4-5 for line voltage detection of C1M2 in 6-car operation. | Verify that the appropriate expected results are set. |
| 8 | Repeat actions 4-5 for line voltage detection of C2M2 in 6-car operation. | Verify that the appropriate expected results are set. |
| 9 | Repeat actions 4-5 for line voltage detection of C2M1 in 6-car operation. | Verify that the appropriate expected results are set. |
| 10 | Repeat actions 4-5 for line voltage detection of C2DT in 6-car operation. | Verify that the appropriate expected results are set. |
| 11 | Repeat actions 1-10 from the other cab as active cab. | Verify that the appropriate expected results are set. |
| 12 | Repeat actions 1-5 for line voltage detection of C1DT in 3-car operation. | Verify that the appropriate expected results are set. |
| 13 | Repeat actions 4-5 for line voltage detection of C1M1 in 3-car operation. | Verify that the appropriate expected results are set. |
| 14 | Repeat actions 4-5 for line voltage detection of C1M2 in 3-car operation. | Verify that the appropriate expected results are set. |
| 15 | Repeat actions 1-5 for line voltage detection of C2DT in 3-car operation. | Verify that the appropriate expected results are set. |
| 16 | Repeat actions 4-5 for line voltage detection of C2M1 in 3-car operation. | Verify that the appropriate expected results are set. |
| 17 | Repeat actions 4-5 for line voltage detection of C2M2 in 3-car operation. | Verify that the appropriate expected results are set. |

Post-Condition

1. Set train to TS1.