

## SSIT-1001(d)1 Cut-Out Circuits

### Purpose

These instructions describe the tests required for cut-out circuits at grade crossing warning systems to verify they override the operation of the warning system.

### Test Intervals

Tests are performed when installed, as required, and at least once every six (6) months as prescribed in *SSIT-7 Signal System Inspection and Test Intervals*.

### Rail Safety

Employee shall ensure the site is safe for employees, the public, vehicular traffic and train operations as defined in *SSIT-8 Protecting Train Operations* prior to performing tests and inspections.

### Procedure - Switch Cut-outs

The following tests are to be performed at each crossing warning system location where a switch circuit within the approach is equipped with a cut-out circuit:

| Step                               | Procedure   |
|------------------------------------|---|
| 1. Test Switch Circuit Controllers | → Switch circuit controller checks shall be done alongside the cut-out checks as outlined in <i>SSIT-801 - Switch Circuit Controllers</i> .   |
| 2. Shunt Approach                  | <ul style="list-style-type: none"> <li>Shunt main line approach with switch circuit installed.</li> </ul> → Check warning system activates  |
| 3. Set Switch to Reverse           | <ul style="list-style-type: none"> <li>Throw switch to reverse position.</li> </ul> → Check reverse contacts make.<br>→ Check warning system deactivates.<br><b>If crossing does not de-activate:</b> Refer to cut-out circuit design for troubleshooting.  |
| 4. Check ½" Clearance              | <ul style="list-style-type: none"> <li>Enter ½' gauge in the reverse point of switch.</li> </ul> → Check warning system activates.<br><ul style="list-style-type: none"> <li>Slowly throw switch from ½" gauge to full normal.</li> </ul> → Check crossing remains activated throughout switch throw. |
| 5. Remove Shunt                    | <ul style="list-style-type: none"> <li>Remove shunt from approach track.</li> </ul> → Check crossing deactivates.   |
| 6. Repeat Switch Cut-out Tests     | <ul style="list-style-type: none"> <li>Repeat steps 1 to 5 for each switch circuit equipped with cut-out at crossing warning system location.</li> </ul>  |
| 7. Update Log Book                 | <ul style="list-style-type: none"> <li>Add any notes of issues observed, or adjustments made.</li> </ul>  |
| 8. Complete Test Form              | <ul style="list-style-type: none"> <li>Record the test as completed on Grade Crossing Warning System Test Form.</li> </ul>  |

## Procedure - Push Button or Jumper Cut-outs

The following tests are to be performed at each crossing warning system location with a push button cut-out circuit:

| Step                              | Procedure  |
|-----------------------------------|--|
| 1. Shunt Approach                 | <ul style="list-style-type: none"> <li>Shunt DC circuit associated with push button or jumper cut-out.</li> <li>→ Check warning system activates.</li> </ul>   |
| 2. Activate Push-Button Cut-Out   | <ul style="list-style-type: none"> <li>Press push button or install jumper to activate cut-out.</li> <li>→ Check warning system deactivates.</li> </ul> <p><b>If crossing does not de-activate:</b> Refer to cut-out circuit design for troubleshooting.</p> |
| 3. Deactivate Push-Button Cut-Out | <ul style="list-style-type: none"> <li>Depress push button, remove jumper, or wait for timing to expire.</li> <li>→ Check warning system activates.</li> </ul>   |
| 4. Remove Shunt                   | <ul style="list-style-type: none"> <li>Remove shunt from approach track.</li> <li>→ Check crossing deactivates.</li> </ul>   |
| 5. Repeat Switch Cut-out Tests    | <ul style="list-style-type: none"> <li>Repeat steps 1 to 4 for each push button or jumper cut-out at crossing warning system location.</li> </ul>  |
| 6. Update Log Book                | <ul style="list-style-type: none"> <li>Add any notes of issues observed, or adjustments made.</li> </ul>   |
| 7. Complete Test Form             | <ul style="list-style-type: none"> <li>Record the test as completed on Grade Crossing Warning System Test Form.</li> </ul>   |