

**COLLECTION OF THE CTL DECISIONS  
DECISION SHEET**

<b>Standard(s):</b> IEC 60950 (1999) 3rd Ed.	<b>Sub clause(s):</b> 2.3.2	<b>Sheet No.</b> 395
<b>Subject:</b> Separation of TNV –3 and SELV circuitry	<b>Key words:</b> - Separation of TNV-3 circuit and SELV circuit	<b>Decision taken at the 39<sup>th</sup> meeting 2002</b>
<p><b>Question:</b></p> <ol style="list-style-type: none"> <li>1. Is it permitted to demonstrate that a TNV -3 circuit is adequately separated from a SELV circuit by means of single fault testing, in the situation where the spacings do not meet the requirements for basic insulation? (The dielectric strength test is still required under Subclause 6.2.1.)</li> <li>2. If so, is it required under the compliance paragraph to short circuit the insulation between the TNV-circuit and the SELV circuit at all points which do not meet the criteria for basic insulation, before carrying out the tests?</li> <li>3. If short circuiting the insulation before carrying out fault tests results in the equipment passing the tests, whereas carrying out the fault tests without short circuiting the insulation would result in the equipment failing the test, should the insulation be short circuited?</li> </ol> <p><b>Rationale:</b></p> <ol style="list-style-type: none"> <li>1. Paragraph 1 of Sub-clause 2.3.2 requires that separation between a TNV-3 and a SELV circuit be such that in the event of a single fault, the SELV circuit remains below TNV-3 limits. Paragraph 2 of Sub-clause 2.3.2 states that basic insulation will achieve this, but other solutions are not excluded. Equipment is not required to meet either Paragraph 2 or 3. It can meet the single fault conditions stated in Paragraph one and in the compliance paragraph.</li> <li>2. According to the compliance paragraph, before carrying out the single fault tests, insulation which does not meet the requirements for basic insulation is short circuited. Presumably this does not mean that short circuits are to be applied between all tracks and components in the entire TNV-3 and SELV circuitry which do not meet basic insulation, but that the insulation at the point where the TNV-3 circuit meets the SELV circuit is short-circuited.</li> <li>3. It is possible to envisage a situation where short circuiting the insulation between TNV-3 and SELV could cause the TNV-3 voltages to be lowered. Fault tests under this condition would not represent the worst case possible fault condition</li> </ol> <p><b>Decision:</b></p> <ol style="list-style-type: none"> <li>1. It is permitted to demonstrate compliance with Subclause 2.3.2 by means of single fault testing. The limits in 2.3.1.b) shall not be exceeded in normal or single fault conditions .</li> <li>2. Before carrying out single fault testing of components and insulation, insulation between TNV-3 and SELV circuits not meeting the requirements of Basic insulation should be short circuited if this results in a worst case voltage measurement at accessible parts of SELV and TNV-1 circuits, and at accessible conductive parts during subsequent fault testing.</li> <li>3. If the single fault test would be more severe if carried out without short circuiting the insulation, the test should be done without short circuiting the insulation.</li> </ol>		