

## DECISION SHEET

<b>Standard(s)- (year and edition):</b> IEC 60601-1:1988 Ed.2 Am1+Am2	<b>Sub clause(s):</b> 20, 20.2	<b>Sheet n°:</b> <b>DSH-416</b>
<b>Subject:</b> Leakage current of floating circuits	<b>Key words:</b> Floating circuits, leakage current	<b>Confirmed by CTL at its 39<sup>th</sup> meeting, in Cologne</b>
<p><b>Question:</b></p> <p>EQUIPMENT may contain floating circuits which under the definition 2.1.10 would not be considered as LIVE, since contact with these parts could not result in excessive leakage currents to earth or to other ACCESSIBLE PARTS. There would therefore appear to be no requirements for safety separation between these circuits and ACCESSIBLE PARTS or APPLIED PARTS. But voltages within these circuits or in conjunction with other circuits may lead to currents exceeding the values given in Table IV.</p> <p><b>Decision:</b></p> <p>If the failure of insulation of such isolated circuits is likely to lead to a SAFETY HAZARD, such insulation should be short-circuited before determining whether a part is LIVE. This short-circuit should not be treated as a SINGLE FAULT CONDITION unless the insulation concerned satisfies the requirements for BASIC or SUPPLEMENTARY INSULATION necessary for the voltages within the isolated part.</p> <p><b>Explanatory notes:</b></p> <p>There are two possibilities for solving this problem. One is to change the definition of LIVE and adopt the requirements for insulation accordingly. The second is to treat the separation of the isolated circuits as subject to failure.</p> <p>If one pole of the isolated circuit is short-circuited to earth (failure of insulation) then the other pole becomes LIVE and the adequacy of the separation of this LIVE part under these conditions may be assessed. If that separation is inadequate then it should be short-circuited in turn to assess the separation on the other pole.</p> <p>Since for an isolated circuit there may be two separate protective insulations (on either pole), each of these can be BASIC INSULATION rather than BASIC and SUPPLEMENTARY INSULATION. Of course other combinations may be used although if the insulation of one pole is less than BASIC INSULATION then the other pole must have DOUBLE or REINFORCED INSULATION.</p>		