

COLLECTION OF CTL DECISIONS

Standard: IEC 60950 Ed. 3	Sub clause: ---	Sheet n. 376 Page 1(1)
Subject: Backfeed protection	Key words: - Backfeed Protection	Decision taken at 37th CTL meeting/2000 further to the trial period consultation
<p><u>Question:</u></p> <p>The product in question is a power supply to IEC/EN 60950 with an internal Battery Back Up Unit (BBU). The BBU provides 170Vdc, which is connected to the “output” of the mains-rectifier bridge. The question is related to the backfeed protection to prevent potential risk of electric shock from being present on the mains supply terminals during interruption of the primary power or removal of the plugs from its socket.</p> <p>Different interpretations have been experienced, and we are looking forward to a consensus. Three alternatives may be listed as follows:</p> <ol style="list-style-type: none"> 1. The BBU can be considered similar to parts of an Uninterruptible Power Systems (UPS), for which there is the European standard EN 50091-1. However this standard is not an IEC standard and may not be applicable outside CENELEC. EN 50091-1 specifies requirements for backfeed protection. Sub clause 2.1.5 states that such switching device shall be of an all pole type having an air gap in each pole in accordance with EN 60950 Table 5 – Minimum clearances in secondary circuits and using the column headed “circuits not subjected to transient overvoltage” – for reinforced insulation at the working voltage that is backfed (in this case 170Vdc). 2. According to sub clause 2.2.6 (IEC 60950), it is likely to apply reinforced insulation between unearthed hazardous voltage secondary circuit and unearthed accessible parts. 3. If the voltage on the mains plug does not exceed 60Vdc (or 42.2V peak) in the event of a single failure, when the mains plug is disconnected and the battery provides 170Vdc to the “output” of the mains rectifier bridge, no additional requirements for “backfeed protection” should be applicable. <p><u>Decision:</u></p> <p>Interpretation Item 3 is the correct one</p> <p><u>Explanatory notes:</u></p>		

