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(54) **METHOD AND APPARATUS FOR ELECTRICAL CABLE TESTING BY PULSE-ARRESTED SPARK DISCHARGE**

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(57) **ABSTRACT**

A method for electrical cable testing by Pulse-Arrested Spark Discharge (PASD) uses the cable response to a short-duration high-voltage incident pulse to determine the location of an electrical breakdown that occurs at a defect site in the cable. The apparatus for cable testing by PASD includes a pulser for generating the short-duration high-voltage incident pulse, at least one diagnostic sensor to detect the incident pulse and the breakdown-induced reflected and/or transmitted pulses propagating from the electrical breakdown at the defect site, and a transient recorder to record the cable response. The method and apparatus are particularly useful to determine the location of defect sites in critical but inaccessible electrical cabling systems in aging aircraft, ships, nuclear power plants, and industrial complexes.

48 Claims, 9 Drawing Sheets

