a hot spot being detected when the amplitudes of a given number of successive echoes are increasingly greater than said given reference, said echoes being provoked by a reduction of the local value of said insulation impedance.

The calculations for locating the local reduction of impedance are for example performed when said hot spot is detected.

In a particular implementation, the measurements performed by said reflectometer are reflectometry measurements of multicarrier type called MCTDR.

Said reflectometer performs, for example, a comparison of said amplitudes with a second reference, called initial reference, said second reference being less than said given reference, an information item being generated when at least one of said amplitudes exceeds said initial reference. Said initial reference is for example greater than or equal to the amplitudes of the echoes received when said line is in so-called initial given operating conditions. Said given reference is for example modified when at least one measured amplitude exceeds said initial reference. The new value of said given reference is for example greater than said measured amplitude.

In another possible implementation, a reflectometry signal being injected on the second end of said line, the echoes received at this end are measured and compared to at least said given reference.

Said installation being for example an air duct, said line being placed in proximity along said duct, said method can be applied to the detection of leaks in said duct, a leak provoking a local temperature rise forming a hot spot, said air duct being for example situated in an aircraft.

Another subject of the invention is a device for detecting a hot spot in an installation, said device comprising at least:

- one line made up of at least two conductors insulated by a material whose insulation impedance depends locally on the temperature, said line being able to run through said installation;

the drifts and anticipate failings. The slow drifts can notably be due to the aging of the cable or even to changes of season. In practice, a particular echo corresponds to the reference profile, the measurements of the drift are therefore made relative to this echo forming the initial reference.

The initial reference 41 is also used in operation phase as in the example illustrated by figure 4 for an embedded application. In this operational phase, the invention makes it possible to discriminate the rapid drifts, due to a temperature increase, from the slow drifts, while measuring the latter. The device therefore retains the initial reference echo 41 to identify the slow drifts of the line and for example propose preventive maintenance.

To identify the rapid drifts, provoked by appearance of hot spots, the device according to the invention uses a floating reference 42, this reference being modified in time. This floating reference makes it possible in particular to not take account of the slow drifts and thus eliminates many sources of false alarms. The device regularly emits signals to perform the reflectometry measurements 43. After each signal emitted the echoes received are measured and then compared 44 to the floating reference 42. If the amplitude of the current echo measured is less than the floating reference, another signal is emitted then another measurement is performed and compared. When the amplitudes of a given number of successive echoes are increasingly greater than the floating reference, according to the profile of figure 3, that is to say that the difference relative to the reference increases over time, this is an information item indicating the presence of a hot spot. The taking into account of several successive measurements allow to disregard faults which would not be due to the appearance of hot spots. In an extreme case, it is, however, possible to take this given number as equal to 1.

A calculation of location 45 of the change of insulation impedance Z_h is then performed according to the known rules of reflectometry, this location indicating the point of appearance of the hot spot. In parallel, an alarm signal 46 is generated. To confirm the appearance of the hot spot, several successive measurements are for example made to check whether profiles of the type of those of figure 3 are obtained. In effect, the trend of the measurements should correspond to the appearance of a hot spot. As indicated previously, in case of a loop connection of the line 22, a

7. The method as claimed in either one of claims 5 or 6, characterized in that said given reference (42) is modified when at least one measured amplitude exceeds said initial reference (41).

8. The method as claimed in claim 7, characterized in that the new value of said given reference is greater than said measured amplitude.

9. The method as claimed in any one of the preceding claims, characterized in that, a reflectometry signal being injected on the second end of said line (22), the echoes received at this end are measured and compared to at least said given reference (42).

10. The method as claimed in any one of the preceding claims, characterized in that, said installation being an air duct, said line (22) being placed in proximity along said duct, said method is applied to the detection of leaks in said duct, a leak provoking a local temperature rise forming a hot spot.

11. The method as claimed in claim 10, characterized in that said air duct is situated in an aircraft.

12. A device for detecting a hot spot in an installation, characterized in that said device comprises at least:

- one line (22) made up of at least two conductors insulated by a material whose insulation impedance (24) depends locally on the temperature, said line being able to run through said installation ;
- a reflectomer (21) capable of periodically transmitting a reflectometry signal at one end of said line and of measuring the echoes received ;

said device implementing the method as claimed in any one of the preceding claims.