I CLAIM:

1. A method for predicting a life cycle of a splice in a transmission line comprising:

a) establishing a baseline over time for a splice based on angular displacements in a signal curve for the splice in a vicinity of a zero crossing point of the signal curve using a sine curve and a first ratio of amplitude at a time of monitoring and an amplitude at a start time and a period change ratio based on a period at the time of monitoring and the period at the start time;

b) repeatedly monitoring a functioning in-service splice over a period of time in the vicinity of the zero crossing point for a signal of the in-service splice using the angular displacements used in step (a) for the signal of the in-service splice; and

c) comparing the baseline of step (a) to information from step (b) to determine a degradation for the functioning in-service splice and a decay rate curve, the decay rate curve providing an indication of a percentage of useful life remaining and time to failure for the functioning in-service splice, the decay rate curve providing a guide for monitoring other splices for useful life and time to failure.

2. An apparatus adapted for practicing the method of claim 1 comprising;

a) probes for determining instantaneous voltage potential across the splice;

b) a current sense device for determining instantaneous current output based upon the splice,

c) a nonconductive platform to support an associate device, the associated device collecting and analyzing data from the functioning in-service splice being monitored; and

d) means for establishing the baseline, repeatedly monitoring the functioning in-service splice over a period of time, and comparing the baseline of step (a) to information from step (b) to determine a degradation for the functioning in-service splice and the decay rate curve.3.

The apparatus of claim 2, further comprising a pair of clamps, the clamps configured to attach to a portion of the transmission line on either side of the splice, the clamps supporting the non-conductive platform.