

The conversion of a reactive load into a generator of reactance, from the viewpoint of these segregated analyses, is achieved by comparing the output of current versus the output of voltage of various components within these circuits and examining their differences or similarities of polarity of sign value. If the voltage and the current share the same polarization of sign value, then a status of consumption of real power is the result. If, on the other hand, the voltage and the current possess opposing values of signed polarization, then a status of the generation of reactive power is the result.

Only those simulations which agree with this definition of the generation of reactance versus the consumption of real power (acting as electrical loads) in terms of the orientation of the polarities of current versus the polarities of voltage agree with thermodynamics, because these simulations do not represent any anomalous creation, nor destruction, of net power and cannot be swept aside as “numerical approximation error” since we already are familiar with the signing convention of physics.

We are also familiar with super-conductivity at, or near, zero degrees Kelvin. So, we know how important a lack of resistance is to the conductivity of a thermodynamically oriented circuit.

Yet, spark gaps possess an extremely large, internal resistance and uses that resistance to alter the voltage *and* the current of exterior inductors to values which are either greater or less than whatever quantity of voltage is feeding all of them!

This “transcendence” of the Conservation of Energy is contingent upon the mere presence of a spark gap whether ON (arcing into a plasma) or OFF (merely ionizing its gases into a pre-arcing state).

To clarify this point... The only law of the jungle which has been violated is any preconceived notion of the universal jurisdiction of the Law of the Conservation of Energy. Its domain is limited to specific conditions. It is *not* universally applicable under all circumstances. Thus, it is best to call this a *transcendence* of the Law of the Conservation of Energy rather than a *violation* of it since the only thing violated is its limited jurisdiction which indicates *examples* of thermodynamics without universally *requiring* its applicability to all types of circuits.