QEG Tuning & Technical Update – Part 3, and QEG Theory of Operation

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The key to obtaining overunity in the QEG, is the vibration of the core steel. The machine must be tuned at the resonant frequency of the core steel to make this work, and the tuning instructions are in Part 1 & 2 of this update.

Between the time we released update 2 and the release of this part (Part 3), we were successful in determining the resonant frequency of our core here in Morocco. If your steel type is the same as ours (M19 at 0.025" lamination thickness), you'll need to be able to run the machine up to slightly over 4,500 RPM for the tuning. So, first you have to make sure your rotor setup will handle that speed. How to do that is also covered in Part 1 of this update.

If you have type M19, you'll find the steel resonant frequency very close to 300Hz (about 4,500 RPM). The resonance capacitors value to resonate at this speed/frequency will be between about 50 and 55nF (0.050 and 0.055uF). When you're running at the steel's resonant frequency, it causes the steel to vibrate (resonate), and 3 things happen:

1) The higher the primary voltage, the more power the machine will put out. When you're running at the core steel's resonant frequency, *the vibration causes the primary voltage to go much higher. Double, or more.* This is (partially) where the overunity comes from. However, at this point care must be taken that the primary high-voltage does not exceed 20kVp (20,000 volts peak). Make sure you have your scope or meter set to read *peak* voltage for this tuning, because when working with insulation systems, the full excursion of the voltage waveform must be included in the measurement (the insulation system is rated to withstand the voltage *peaks*). As you approach the steel resonant frequency, the protection gap will most likely fire off, as the high voltage level will be increasing. The high-voltage level can be controlled to some extent by reducing the load, but if your voltage is still too high with minimum loading, a variable resistor can be added in series between one end of the primary winding and the resonance capacitors. (The resistor should be something like 0-1,500 Ohms @ 25 Watts). Take care not to exceed 20kVp, or you could short out the primary windings (although the proper setting of the protection gap should prevent this). This is a bit tricky because you want to run it with the voltage as high as possible (as close to 20kVp as you can get *without going over*). The protection gap should be set so that it will pass 20kVp, but no more.

2) The vibration changes the microcrystalline structure of the core steel. It becomes ‘conditioned’. What this means is that when you've completed the tuning procedure, you've actually modified the characteristics of the core steel so that it ‘wants to’ resonate easily. This is further explained in the ‘Theory of Operation’ below.

3) While the core is vibrating at it's resonant frequency, it is in the state where it can take on the radiant energy that's inserted through the exciter coil and ground connection (further explained in the ‘Theory

of Operation' below). It has to be vibrating/resonating for this to work. This is where the rest of the overunity comes from. Remember, Mr. Tesla said "Potential, Vibration, and Frequency"!

Once the tuning is completed, the core will be conditioned such that the rotor can be slowed down to the 1/2 harmonic, and still excite the steel fully into resonance. The 1/2 harmonic would be about 150Hz (secondary frequency). This is a good permanent running speed (about 2,230 RPM). The resonance capacitors value at 150Hz will be about 200nF (0.2uF). The time it takes to sufficiently condition the core (running at 300Hz) will vary, but you can tell when you're done by periodically comparing the high voltage levels (or fluorescent tube brightness levels) with the machine running at 300Hz, and then at 150Hz. The voltage (or brightness) levels should be similar at both speeds if the steel is fully resonating. You'll be finished when you see no further voltage increase (in the high voltage level at 150Hz), after checking between the 2 speeds a few times.

Also, it has come to our attention that the "**Procedure for Triggering the Radiant Energy Surges (into the core)"** in Part 2 of this update, does not specify that the procedure is to be done at the lower, ½ harmonic speed (150Hz/2,230 RPM). This is because 300Hz is beyond the frequency range where efficient power transfer occurs between primary and secondary, and there would not be enough power to drive the exciter coil. The generator must be fully loaded, running at 150Hz during this procedure. We apologize that this was not specified in Part 2.

Theory of Operation - Here is how we understand the system to work:

After almost 2 years of research and development, we have learned that there are 2 important unique features of this generator that will allow us to reach overunity:

1) The machine can be thought of as a self-powered toroidal transformer. Self-powered meaning that it generates its own primary power via mechanically pumped parametric resonance (1^{st} resonance). As the rotor approaches, aligns, and leaves a given pair of stator poles, a magnetic shunt is formed which alters the effective shape of the core as well as the magnetic path length. This produces the desired parametric change in both Reluctance and Inductance which is "parametric pumping". Through transformer action, this provides the basic power output (up to 800 Watts peak for 1000 Watts input). While the system has very low Lenz effect and is comparatively efficient, at this point, it's not producing over unity output, and shouldn't be expected to produce more output than input until the tuning steps are done as described in Part 1 & Part 2 of this update.

2) The other 'secret' feature is that the machine also generates its own radiant energy. This is different from conventional electromagnetic transformers. Normal transformers are governed by the flux coupling term, and are based upon constant reluctance and inductance values with time variant current (and voltages). If we look at the QEG's primary voltage and current signals on the scope, both waveforms are clear, sharp and well-defined. This is also true if we look at the secondary *voltage* signal. However, when viewing the secondary *current* waveform, it looks noisy and full of spikes, as though there is something wrong with the scope or probe, or a bad connection, but there's nothing wrong with the setup. What we're seeing are radiant spikes. If we zoom out the scope, we see the classic sharp, narrow (less than 1uS width) spikes that characterize radiant energy.

As the magnetic shunts described above form and subsequently disconnect, magnetic snap-back occurs as the magnetic flux loops are broken and forced to reform within the cyclically altering core geometry. The radiant energy effects occur in the secondary output current when magnetic snap-back occurs. This effect is what we use to 'tap in' to the energy present in the medium all around us, using the exciter coil, antenna, and ground connection.

Unique Machine Features Leading to Over-Unity

1) Self-Generated Input Power via Parametric Resonance
2) Very Low Lenz Effect By-Design
3) Generates Radiant Spikes via Magnetic Snap-Back

Core Steel Resonance/Vibration

Now if we focus on the sequence of events during the tuning process, we see that as you accumulate run time operating at the core steel's resonant frequency, the steel becomes 'conditioned' or 'predisposed' to vibrate *at that frequency* much more easily than in its initial (new) condition. This is important because after tuning, we have to slow the machine down to the 1/2 harmonic (150Hz/2,230 RPM), in order to be in the frequency range where efficient power transfer occurs between primary and secondary. Due to the steel type and geometry, power transfer/transformer action is much more efficient at lower speeds/frequencies, such as 150Hz.

The core develops sufficient energy to excite the steel into resonance running at the fundamental frequency (300Hz). However, when the machine is slowed down to the ½ harmonic (150Hz) the exciting energy is also reduced (in half, generally). This is why the core steel must be pre-'conditioned', so that it can still be driven fully into resonance from the lower exciting energy level. The lower energy level at the 150Hz harmonic is not sufficient to drive the core steel into resonance in its initial (new) condition.

Radiant Energy Insertion via Exciter Coil, Antenna, and Ground Connection

The exciter coil is actually a 1.3 MHz tuned antenna, and the 20 to 50 foot external antenna wire is an extension of it, used to place a conductor out in the atmosphere, to 'guide' the radiant signal in to the coil. The antenna wire does not have to be resonant, since it is not a radio signal we're bringing in.

With the generator running in resonance at the core steel's ½ harmonic resonant frequency (150Hz), and the exciter coil connected in the secondary (load) circuit, tuned and resonant at 1.3 MHz, what we have is a radiant energy transceiver. If you have some knowledge of the characteristics of radiant energy (radiant electricity, longitudinal electricity, 'cold' electricity), you'll recall that it is identified by sharp, narrow, DC impulses (spikes), with duration of 1.0uS (1 microsecond) or less. As noted above, the machine generates these impulses on it's own in the secondary circuit, via magnetic snap-back. Through the resonance of the exciter coil, these impulses are radiated or 'broadcast' into the ether where they 'connect' with the radiant energy resident there. Here is the mechanism:

The significance of the 1.3MHz tuning is that this is the 'frequency' or duration of the radiant impulses. i.e., 1.0 MHz= 1.0 uS (microsecond), and 1.3MHz= 0.77uS. It is known from Mr. Tesla's work that different effects are realized with radiant impulses of varying duration;

"Tesla found that impulse duration alone defined the effect of each succinct spectrum. These effects were completely distinctive, endowed with strange additional qualities never purely experienced in Nature. Trains of impulses, each exceeding 0.1 millisecond duration, produced pain and mechanical pressures. In this radiant field, objects visibly vibrated and even moved as the force field drove them along. Thin wires, exposed to sudden bursts of the radiant field, exploded into vapor. Pain and physical movements ceased when impulses of 100 microseconds or less were produced. With impulses of 1.0 microsecond duration, strong physiological heat was sensed. **Further decreases in impulse brought spontaneous illuminations capable of filling rooms and vacuum globes with white light".**
– excerpted from John Bedini.net

The exciter coil can also be thought of as a sort of notch or band pass filter since it is tuned to pass radiant impulses of a particular duration less than 1uS (0.77uS). Although the radiant energy can be tapped at other frequencies, we were told by WITTS that the 1.3MHz tuning was the easiest.

Due to the x-coil's resonance at the same frequency as the radiant impulses, it acts as a bidirectional 'open gate' to the energy in the surrounding ether. With the x-coil tuned and resonant, the machine's self-generated radiant impulses are now able to radiate into the surrounding space, and along the external antenna wire, where they are 'found' by, and 'connect' to the energy in the ether. The method for bringing the radiant energy surges into the machine is detailed in Part 2 of this update.

It has been shown that radiant energy, or 'longitudinal electricity', travels *through the medium around a conductor,* rather than through the conductor itself, however, it does follow the conductor, therefore it is still subject to the effects of inductance, and will produce power in transformers. Since the radiant surges are inserted into the secondary windings (via x-coil resonance), the effect is that of having a 3rd isolated power source (Parametric Resonance is 1st, and Core Steel Resonance is 2nd).

After the core is conditioned at 300Hz, we are now able to drive the steel into resonance running at the slower ½ harmonic (150Hz/2,230 RPM). The steel resonance is also key for the operation of the x-coil;

When performing the tuning process, the radiant surges are inserted into the secondary windings, where they are used to electrify or 'charge' the core. In order to 'break loose' the energy from the medium (the secondary windings), there must be a disturbance or perturbation of the medium. This 'disturbance' is provided by the vibration of the resonating core steel. The effect is that the energy is 'stripped off' or 'shaken loose' from the windings, and goes into the core steel, causing it to become electrified or 'charged'. This causes a further physical modification of the core steel, in addition to the 'conditioning' discussed above.

Since the radiant energy impulses/surges are DC, we have to provide a return path to complete the circuit with the energy in the ether. This is why a heavy-duty ground connection is necessary during the

tuning. After tuning is completed, the exciter coil, spark gap, tank capacitor (if used), and grounding network can be removed, because the core steel retains these new physical characteristics.

The effect of the radiant energy circulating in the system is that we have now 'activated' the core, which provides an overall multiplication or 'amplification' of the generator's output power, since the steel in the stator is common to both the primary and secondary windings. This is the remaining source of over-unity in the QEG.

The technique of resonating the core steel is not unknown, and has recently begun to find its way into mainstream engineering. One of the major companies involved is Baldor Motors in Australia.

This concludes the "QEG Tuning and Technical Update, Parts 1, 2, and 3", and the "QEG Theory of Operation".

Those who have been following our progress with the QEG for any length of time will know that from the initial launch to now, all of the funding for the project has come from you, the people, through several crowdfunding campaigns, and donations, and we wish to express our profound gratitude to all who have contributed. Use of workspaces, test equipment and instrumentation that we employed at the various builds was also donated. We have a few older pieces of equipment, but no lab, or even access to one. In spite of this, we feel we've been able to accomplish amazing things! We have managed to build 4 machines ourselves and assist with a 5th, while bringing the machine through development, documentation, and publishing, and very nearly to completion.

In successfully determining the core steel's resonant frequency, we have cleared the last major hurdle to making the machine self-sustain while providing additional power.

As Always, Many Thanks and Blessings to all our supporters!

James and the FTW/QEG Team