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PROJECT ICARUS

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RE: Hydrogen Fracturing Process Memo WFC 420

Hydrogen Fracturing Process

Method

Using "Voltage Potential" to stimulate the water molecule to produce atomic energy on demand

Operational Parameters

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Pulsing Transformer

The pulsing transformer (A/G) steps up the voltage amplitude or voltage potential during pulsing operations. The primary coil is electrically isolated (no electrical connection between primary and secondary coil) to form Voltage Intensifier Circuit (AA) Figure (1-1). Voltage amplitude or voltage potential is increased when secondary coil (A) is wrapped with more turns of wire. Isolated electrical ground (J) prevents electron flow from input circuit ground.

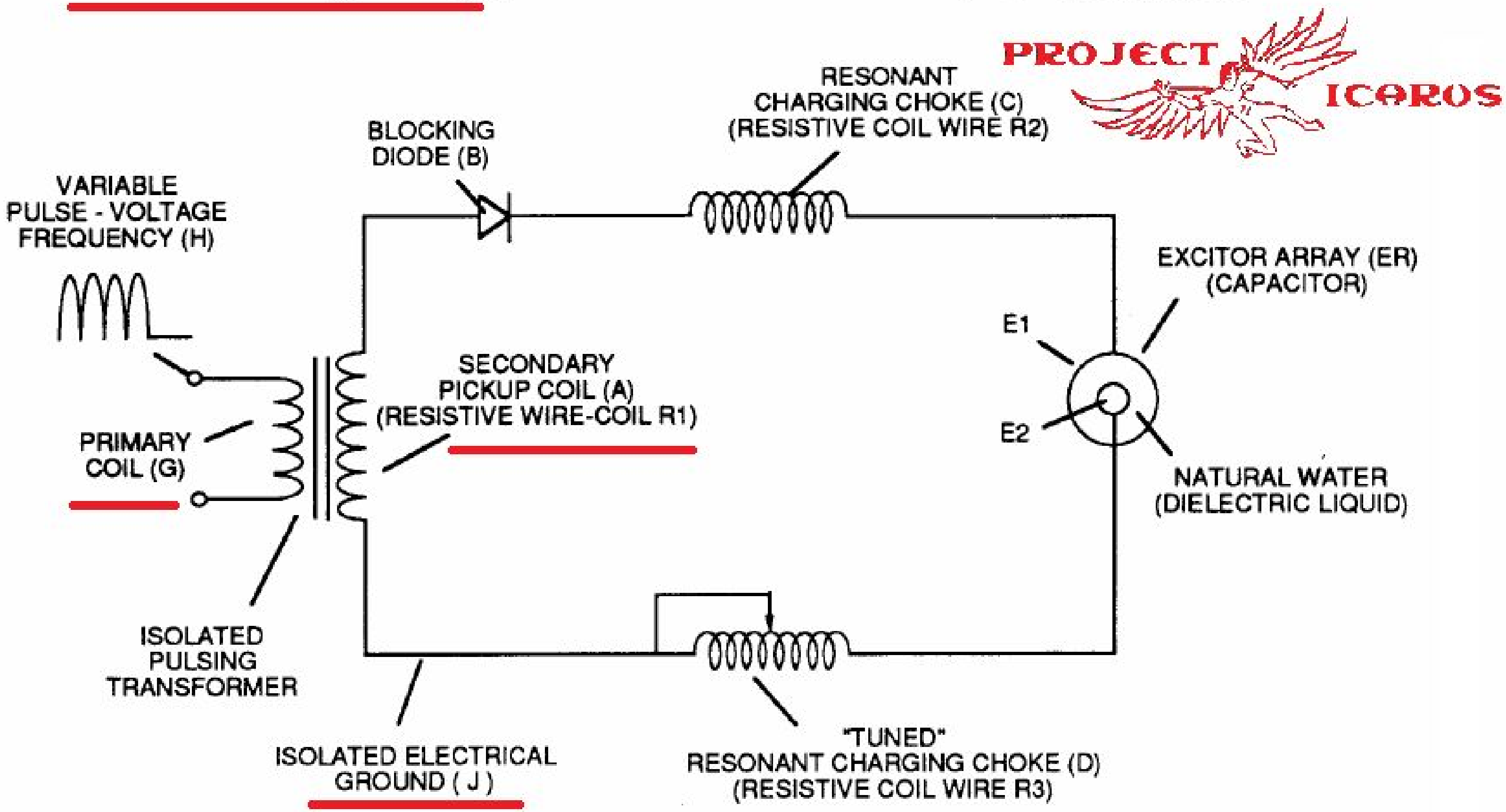

FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

Blocking Diode

Blocking Diode (B) prevents electrical "shorting" to secondary coil (A) during pulse-off time since the diode "only" conducts electrical energy in the direction of the schematic arrow.

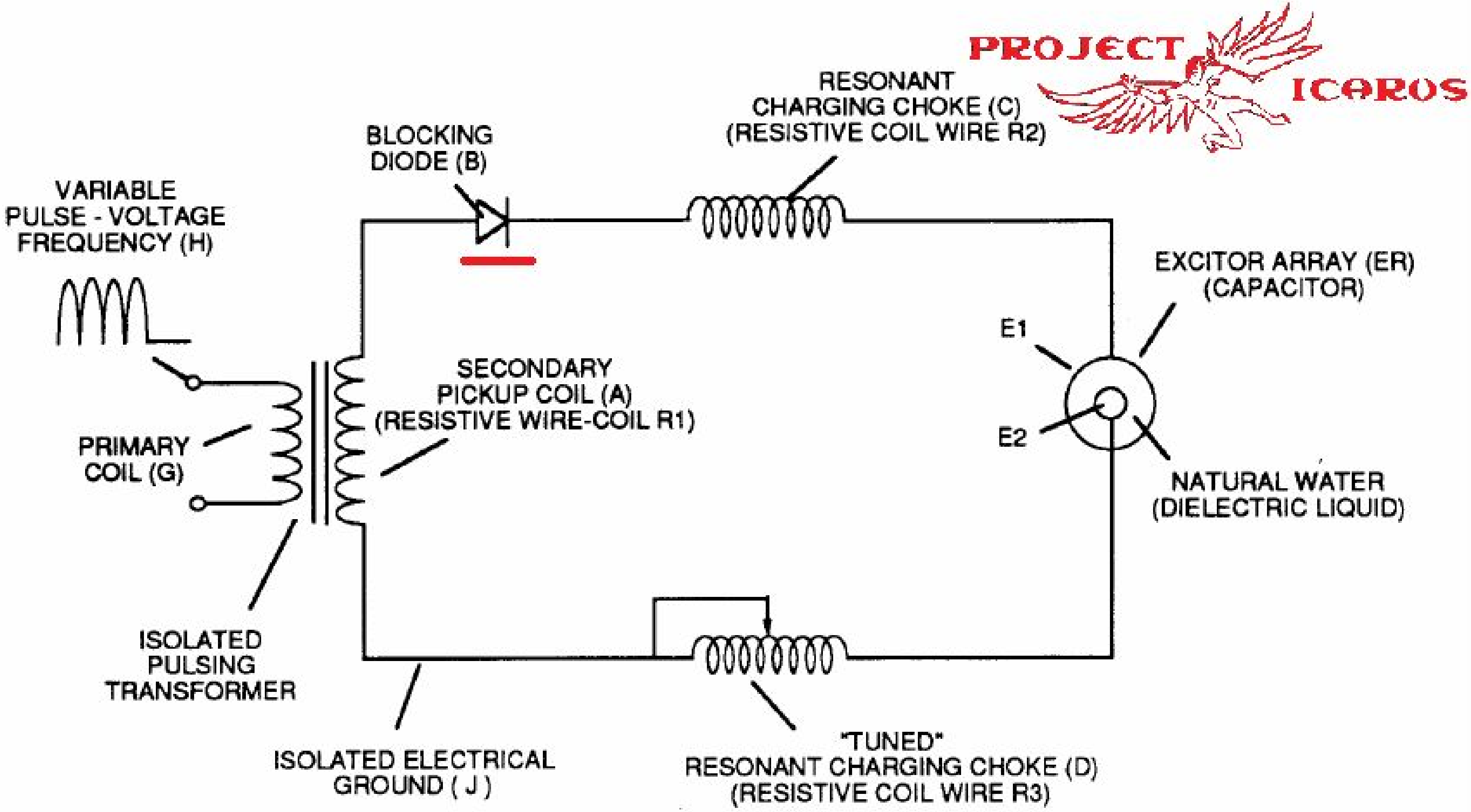

FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

LC Circuit

Resonant Charging Choke (C) in series with Excitor-array (E1/E2) forms an inductor-capacitor circuit (LC) since the Excitor-Array (ER) acts or performs as an capacitor during pulsing operations, as illustrated in Figure (1-2) as to Figure (1-1).

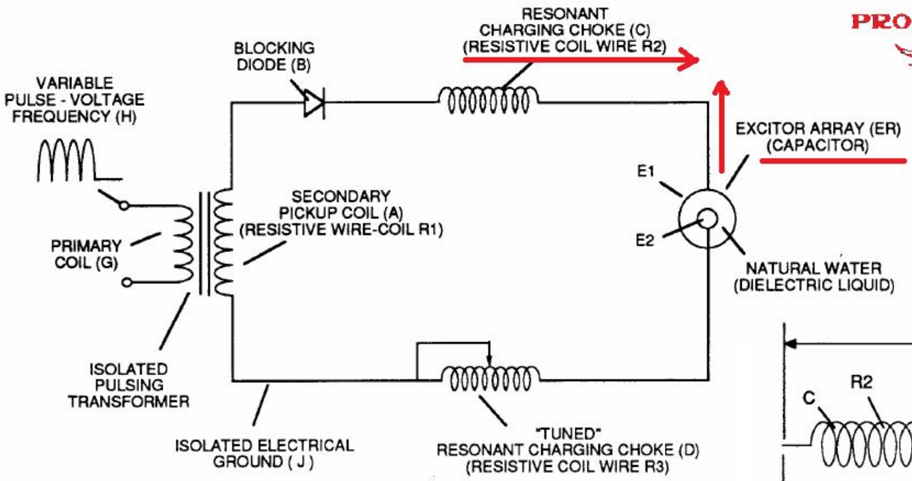

FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

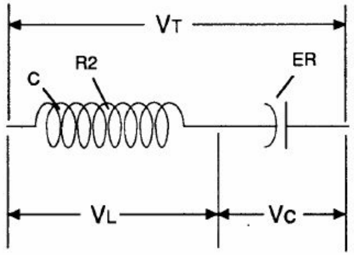

FIGURE 1-2: LC CIRCUIT

The value of the Inductor (C), the value of the capacitor (ER), and the pulse-frequency of the voltage being applied across the LC circuit determines the impedance of the LC circuit.

The impedance of an inductor and a capacitor in series, Z series is given by

$$Z \text{ series} = (Xc - Xl) \quad \text{(Eq 1)}$$

Where (Eq 2) (Eq 3)

$$Xc = \frac{1}{2\pi fc} \qquad Xl = 2\pi fl$$

The Resonant Frequency (F) of an LC circuit in series is given by

$$F = \frac{1}{2\pi \sqrt{LC}} \quad \text{(Eq 4)}$$

Ohm's Law for LC circuit in series is given by

$$Vt = I Z \quad \text{(Eq 5)}$$

LC Circuit

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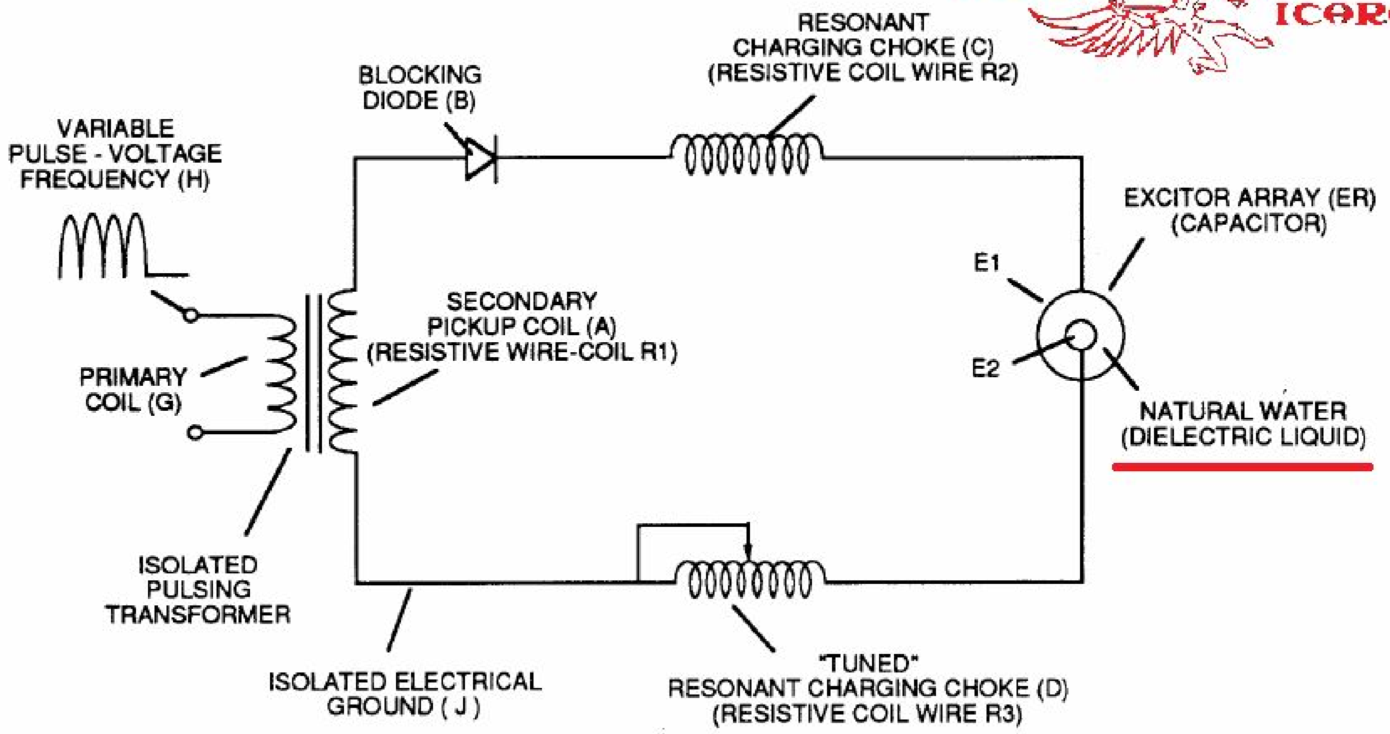

FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

The Dielectric Properties (insulator to the flow of amps) of natural water (dielectric constant being 78.54 @ 25c) between the electrical plates (E1/E2) forms the capacitor (ER). Water now becomes part of the Voltage Intensifier Circuit in the form of "resistance" between electrical ground and pulse-frequency positive-potential...helping to prevent electron flow within the pulsing circuit (AA) of Figure 1-1.

The Inductor (C) takes on or becomes an Modulator Inductor which steps up an oscillation of an given charging frequency with the effective capacitance of an pulse-forming network in order to charge the voltage zones (E1/E2) to an higher potential beyond applied voltage input.

The Inductance (C) and Capacitance (ER) properties of the LC circuit is therefore "tuned" to resonance at a certain frequency. The Resonant Frequency can be raised or lowered by changing the inductance and/or the capacitance values. The established resonant frequency is, of course, independent of voltage amplitude, as illustrated in Figure (1-3) as to Figure (1-4).

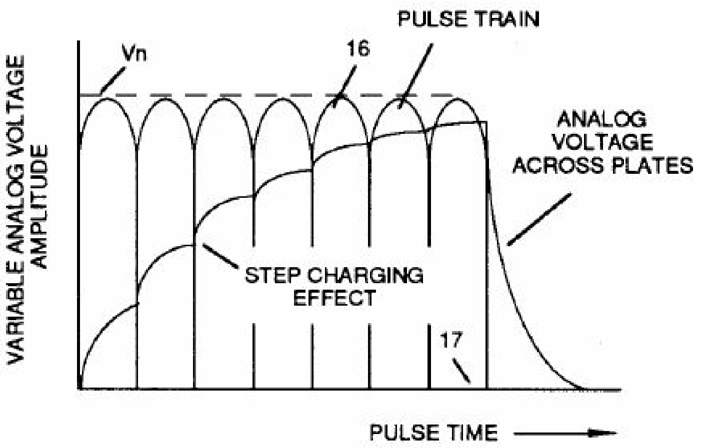

FIGURE 1-3: APPLIED VOLTAGE TO PLATES

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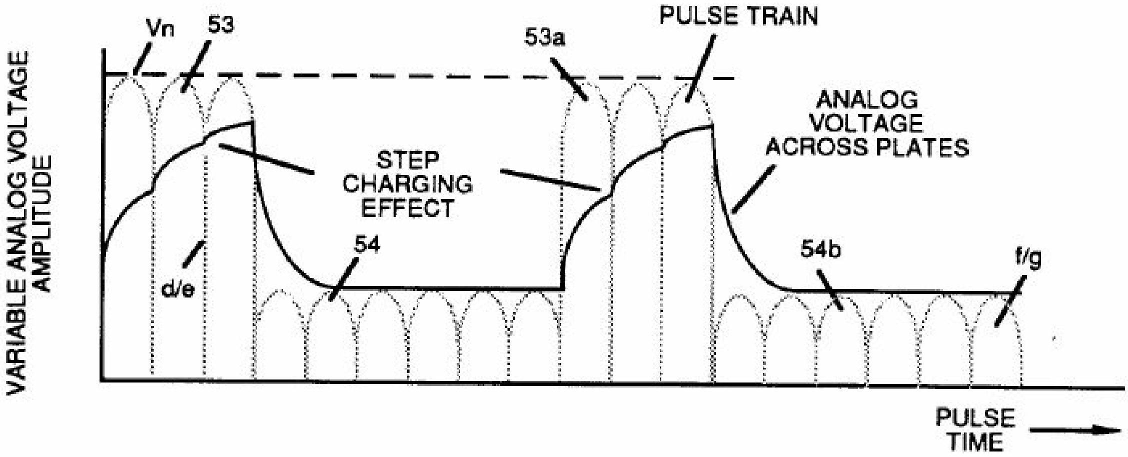


FIGURE 1-4: APPLIED VOLTAGE TO RESONANT CAVITY

LC Voltage

The voltage across the inductor (C) or capacitor (ER) is greater than the applied voltage (H). At frequency close to resonance, the voltage across the individual components is higher than the applied voltage (H), and, at resonant frequency, the voltage V_T across both the inductor and the capacitor are theoretically infinite. However, physical constraints of components and circuit interaction prevents the voltage from reaching infinity.

The voltage (V_L) across the inductor (C) is given by the equation

$$Vl = \frac{Vt\ Xl}{(Xl - Xc)} \qquad \text{(Eq 6)}$$

The voltage (V_C) across the capacitor is given by

$$Vc = \frac{V t\ Xc}{(Xl - Xc)} \qquad \text{(Eq 7)}$$

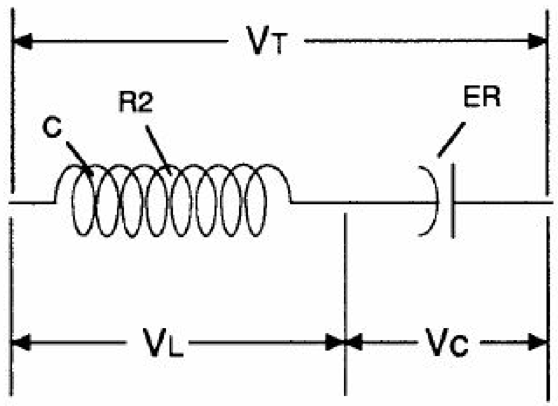


FIGURE 1-2: LC CIRCUIT

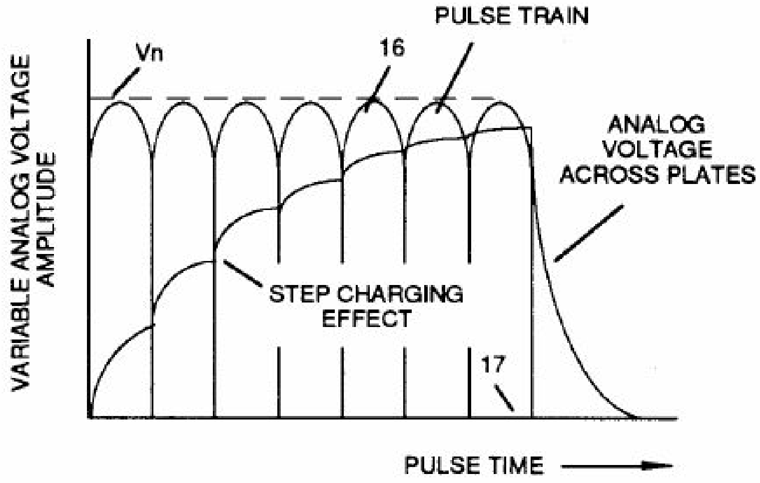


FIGURE 1-3: APPLIED VOLTAGE TO PLATES

During resonant interaction, the incoming unipolar pulse-train (H) of Figure (1-1) as to Figure (1-5) produces an step-charging voltage-effect across Excitor-Array (ER), as illustrated in Figure (1-3) and Figure (1-4). Voltage intensity increases from zero 'ground-state' to an high positive voltage potential in an progressive function. Once the voltage-pulse is terminated or switched-off, voltage potential returns to "ground-state" or near ground-state to start the voltage deflection process over again.

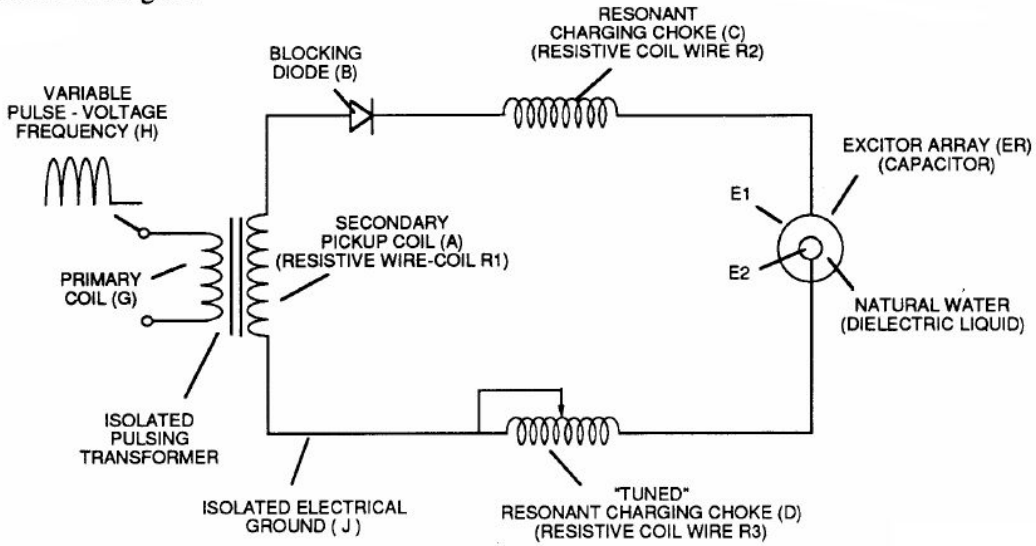


FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

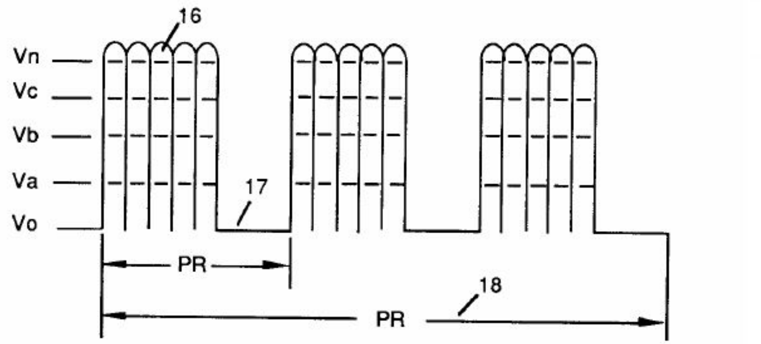


FIGURE 1-5: VARIABLE AMPLITUDE GATED UNIPOLAR PULSE-FREQUENCY DYNAMICALLY CONTROLS HYDROGEN GAS-YIELD ON DEMAND WHILE INHIBITING AMP FLOW

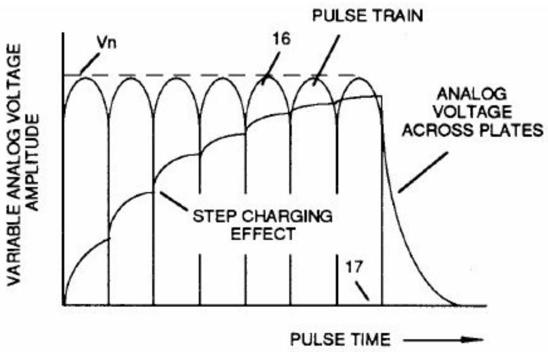


FIGURE 1-3: APPLIED VOLTAGE TO PLATES

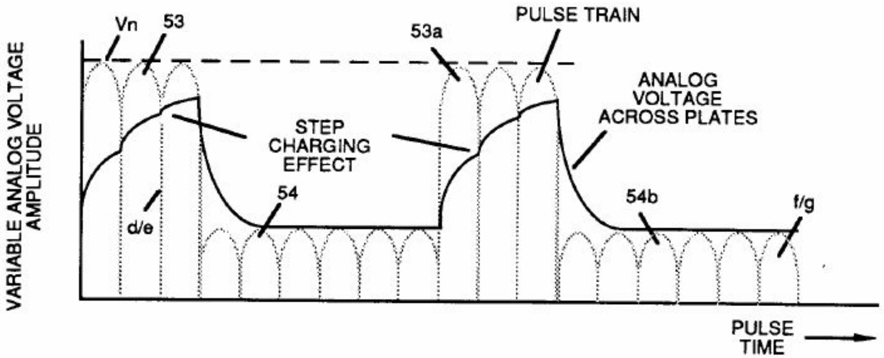


FIGURE 1-4: APPLIED VOLTAGE TO RESONANT CAVITY

Voltage intensity or level across Excitor-Array (ER) can exceed 20,000 volts due to circuit (AA) interaction and is directly related to pulse-train (H) variable amplitude input.

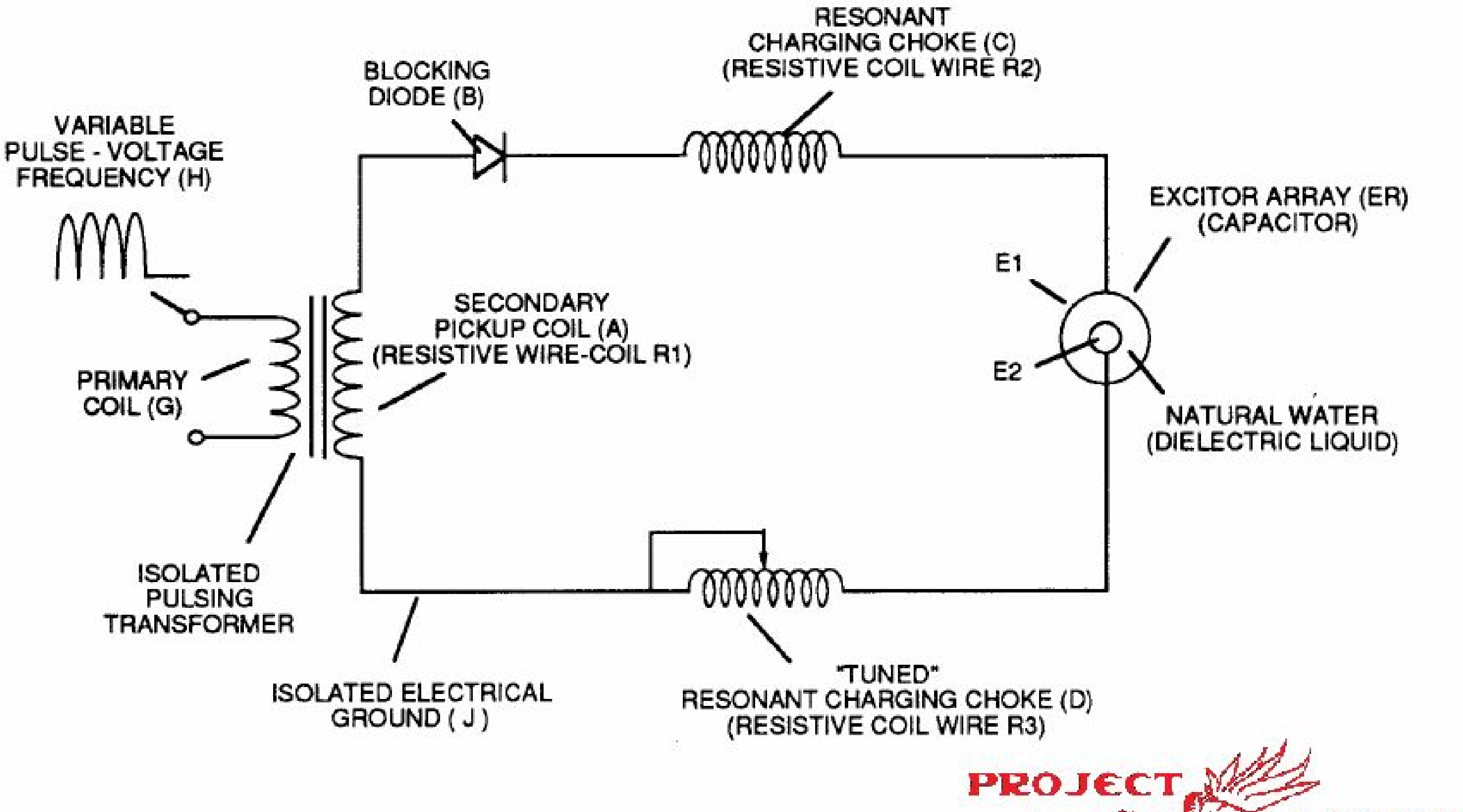


FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

RLC Circuit

Inductor (C) is made of or composed of resistive wire (R2) to further restrict D.C. current flow beyond inductance reaction (XL), and, is given by

$$Z = \sqrt{R_I^{\,2} + (X_l - X_c)^2} \qquad \text{(Eq 8)}$$

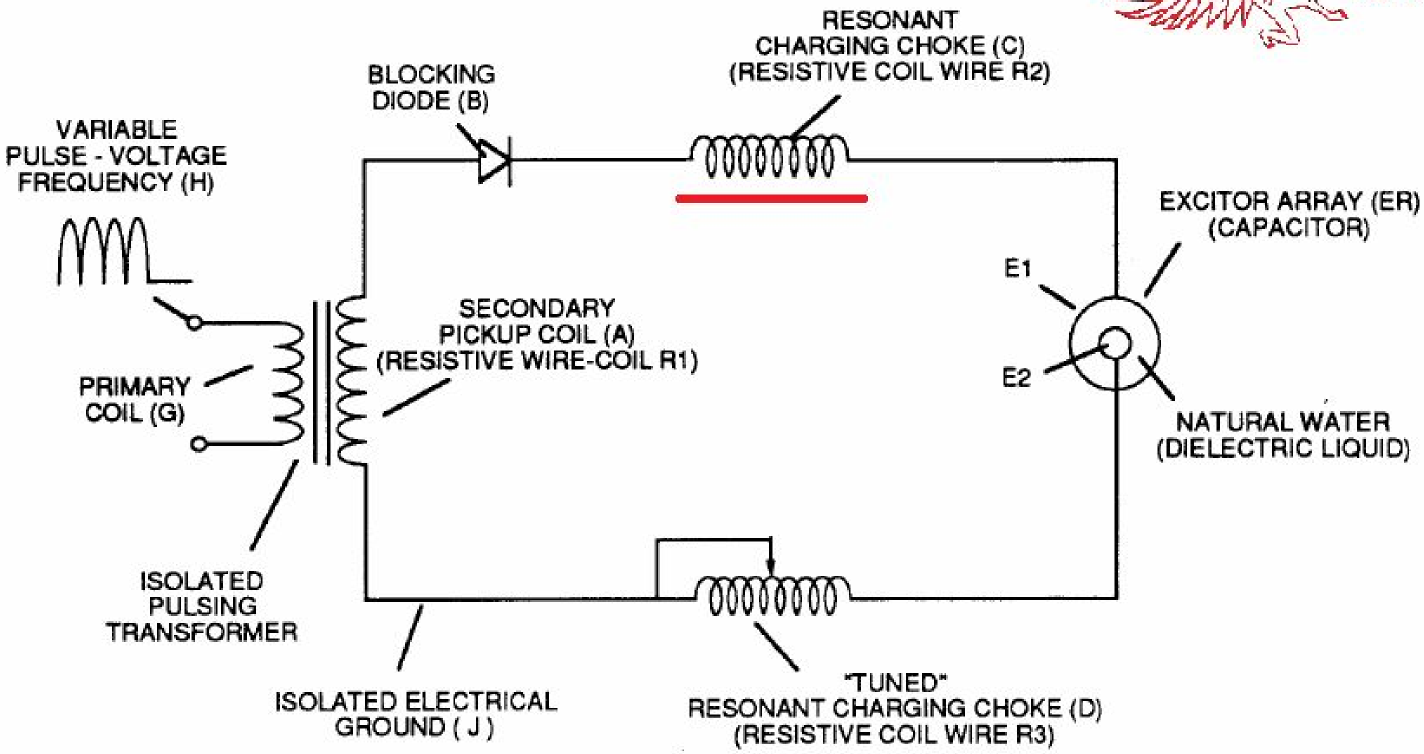
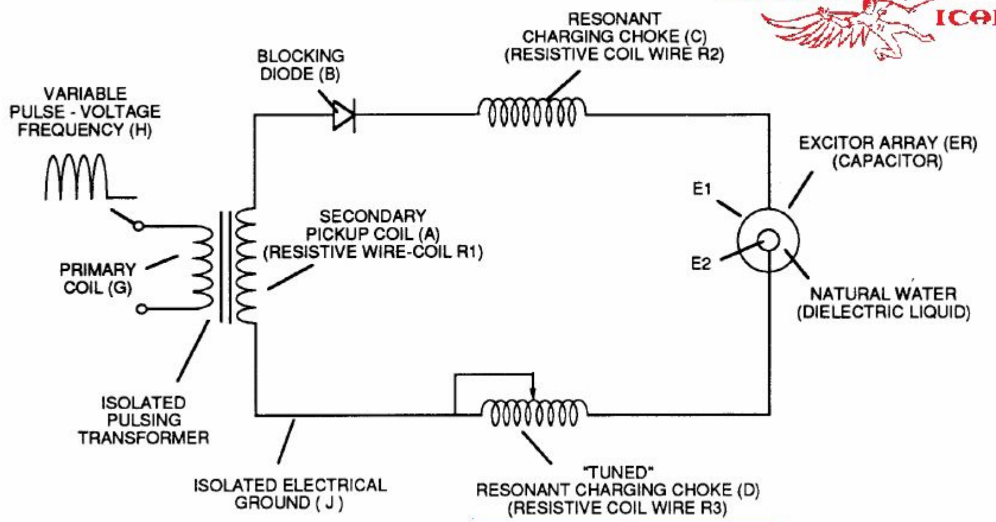


FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

Dual -inline RLC Network

Variable inductor-coil (D), similar to inductor (C) connected to opposite polarity voltage zone (E2) further inhibits electron movement or deflection within the Voltage Intensifier Circuit. Movable wiper arm fine "tunes" "Resonant Action" during pulsing operations. Inductor (D) in relationship to inductor (C) electrically balances the opposite voltage electrical potential across voltage zones (E1/E2).



VIC Resistance

Since pickup coil (A) is also composed of or made of resistive wire-coil (R1), then, total circuit resistance is given by

$$Z = R_I + Z_2 + Z_3 + R_E \qquad \text{(Eq 9)}$$

Where, RE is the dielectric constant of natural water.

Ohm's Law as to applied electrical power, which is

$$E = IR \qquad \text{(Eq 10)}$$

Where

$$P = EI \qquad \text{(Eq 11)}$$

Whereby

Electrical power (P) is an linear relationship between two variables, voltage (E) and amps (I).

Voltage Dynamic

Potential Energy

Voltage is "electrical pressure" or "electrical force" within an electrical circuit and is known as "voltage potential". The higher the voltage potential, the greater "electrical attraction force" or "electrical repelling force" is applied to the electrical circuit. Voltage potential is an "unaltered" or "unchanged" energy-state when "electron movement" or "electron deflection" is prevented or restricted within the electrical circuit.

Voltage Performs Work

Unlike voltage charges within an electrical circuit sets up an "electrical attraction force; whereas, like electrical charges within the same electrical circuit encourages an "repelling action". In both cases, electrical charge deflection or movement is directly related to applied voltage. These electrical "forces" are known as "voltage fields" and can exhibit either a positive or negative electrical charge.

Likewise, Ions or particles within the electrical circuit having unlike electrical charges are attracted to each other. Ions or particle masses having the same or like electrical charges will move away from one another, as illustrated in Figure (1-6).

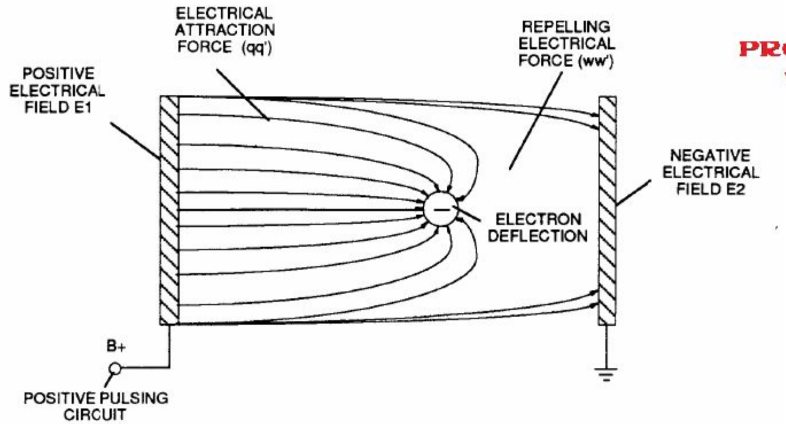


FIGURE 1-6: VOLTAGE POTENTIAL PERFORMING WORK

Furthermore, electrical charged ions or particles can move toward stationary voltage fields of opposite polarity, and, is given by Newton's second Law $A = \frac{F}{M}$ (Eq 12)

Where

The acceleration (A) of an particle mass (M) acted on by a Net Force (F).

Whereby

Net Force (F) is the "electrical attraction force" between opposite electrically charged entities, and, is given by Coulomb's Law $F = \frac{q\,q'}{R^2}$ (Eq 13)

Whereas

Difference of potential between two charges is measured by the work necessary to bring the charges together, and, is given by $V = \frac{q}{e^R}$ (Eq 14)

The potential at a point due to a charge (q) at a distance (R) in a medium whose dielectric constant is (e).

Atomic Interaction to Voltage Stimulation

Atomic structure of an atom exhibits two types of electrical charged mass-entities. Orbital electrons having negative electrical charges (-) and a nucleus composed of protons having positive electrical charges (+). In stable electrical state, the number of negative electrically charged electrons equals the same number of positive electrically charged protons...forming an atom having "no" net electrical charge.

Whenever one or more electrons are "dislodged" from the atom, the atom takes on a net positive electrical charge and is called a positive ion. If an electron combines with a stable or normal atom, the atom has a net negative charge and is called a negative ion.

Voltage potential within an electrical circuit (see Voltage Intensifier Circuit as to Figure 1-1) can cause one or more electrons to be dislodged from the atom due to opposite polarity attraction between unlike charged entities, as shown in Figure (1-8) (see Figure 1-6 again as to Figure 1-9) as to Newtons's and Coulomb's Laws of electrical force (RR).

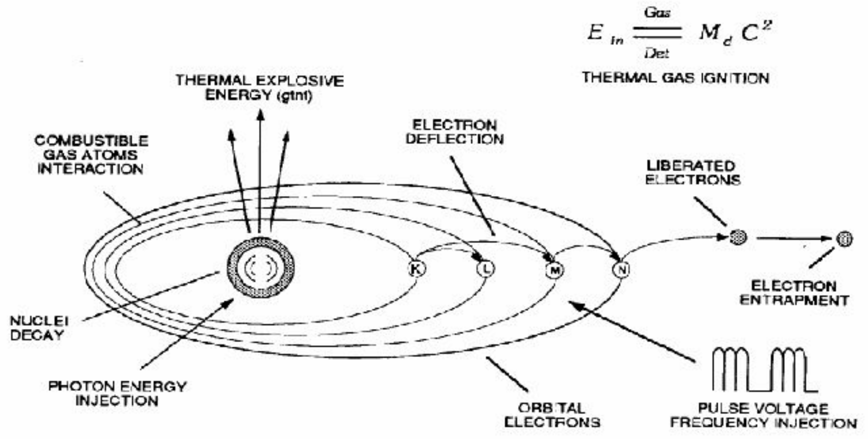


FIGURE 1-8: HYDROGEN FRACTURING PROCESS

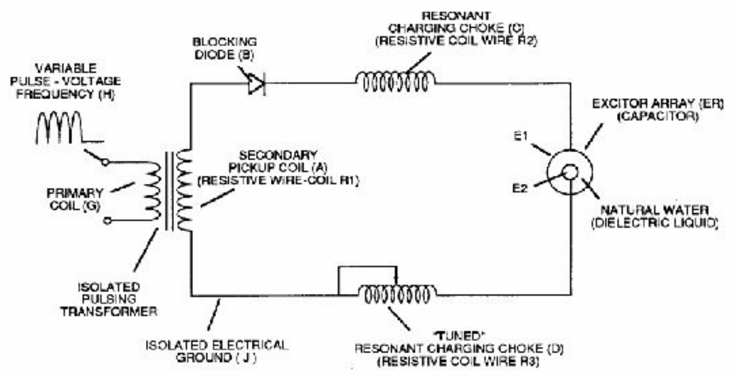


FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

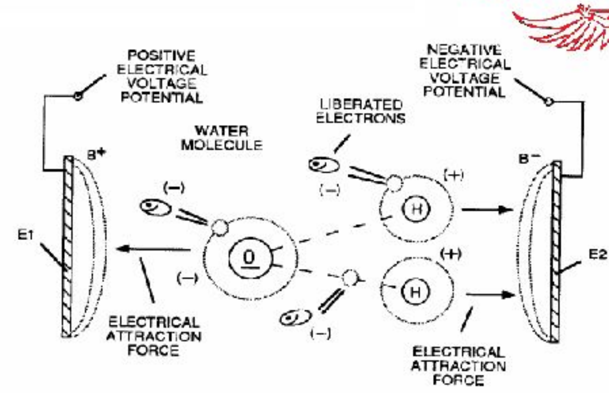


FIGURE 1-9: ELECTRICAL POLARIZATION PROCESS

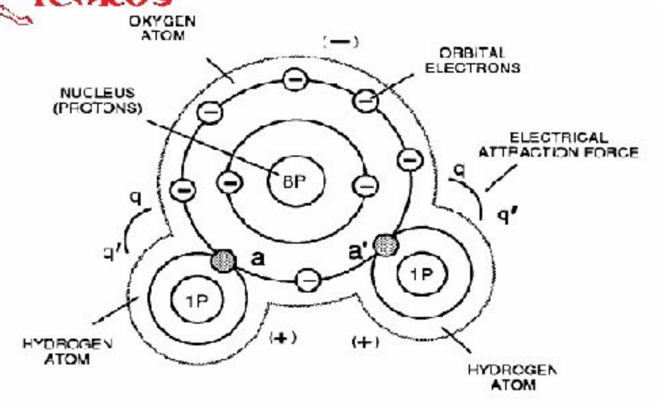


FIGURE 1-7: ELECTRICAL CHARGES OF THE WATER MOLECULE

The resultant electrical attraction force (qq') combines or joins unlike atoms together by way of covalent bonding to form molecules of gases, solids, or liquids.

When the unlike oxygen atom combines with two hydrogen atoms to from the water molecule by accepting the hydrogen electrons (aa' of Figure 1-7), the oxygen atoms become "net" negative electrically charged (-) since the restructured oxygen atom now occupies 10 negative electrically charged electrons as to only 8 positive electrically charged protons. The hydrogen atom with only its positive charged proton remaining and unused, now, takes on a "net" positive electrical charge equal to the electrical intensity of the negative charges of the two electrons (aa') being shared by the oxygen atom...satisfying the law of physics that for every action there is an equal and opposite reaction. The sum total of the two positive charged hydrogen atoms (++) equaling the negative charged oxygen atom (- -) forms a "no" net electrical charged molecule of water. Only the unlike atoms of the water molecule exhibits opposite electrical charges.

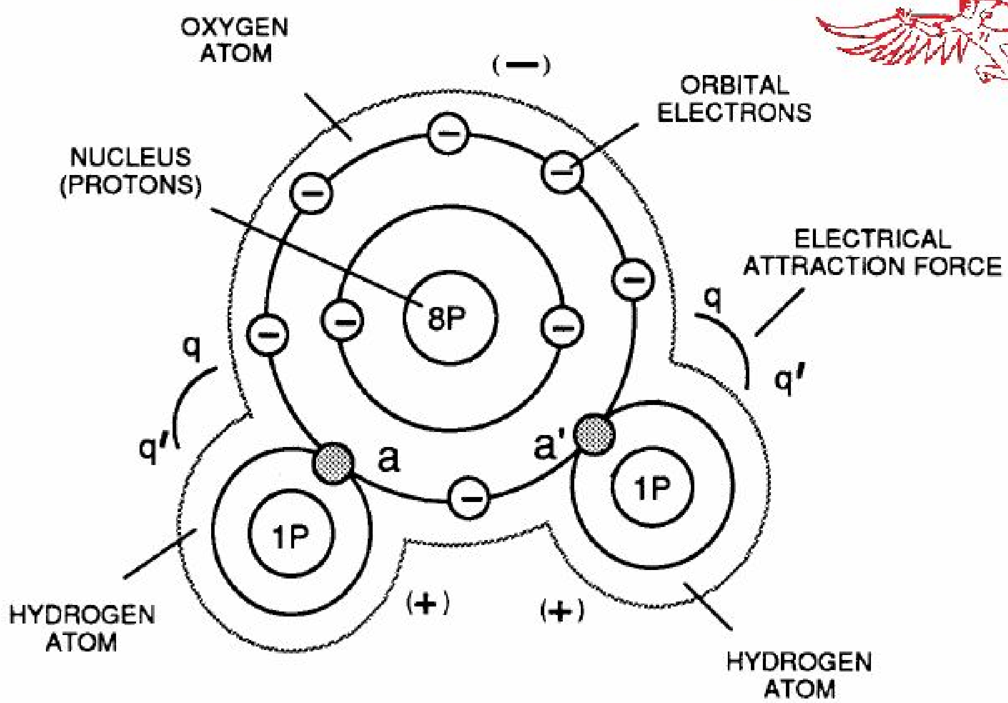


FIGURE 1-7: ELECTRICAL CHARGES OF THE WATER MOLECULE

Voltage Dissociation of The Water Molecule

Placement of a pulse-voltage potential across the Excitor-Array (ER) while inhibiting or preventing electron flow from within the Voltage Intensifier Circuit (AA) causes the water molecule to separate into its component parts by, momentarily, pulling away orbital electrons from the water molecule, as illustrated in Figure (1-9).

The stationary "positive" electrical voltage-field (E1) not only attracts the negative charged oxygen atom but also pulls away negative charged electrons from the water molecule. At the same time , the stationary "negative" electrical voltage field (E2) attracts the positive charged hydrogen atoms. Once the negative electrically charged electrons are dislodged from the water molecule, covalent bonding (sharing electrons) ceases to exist, switching-off or disrupting the electrical attraction force (qq') between the water molecule atoms.

The liberated and moving atoms (having missing electrons) regain or capture the free floating electrons once applied voltage is switched-off during pulsing operations. The liberated and electrically stabilized atom having a net electrical charge of "zero" exit the water bath for hydrogen gas utilization.

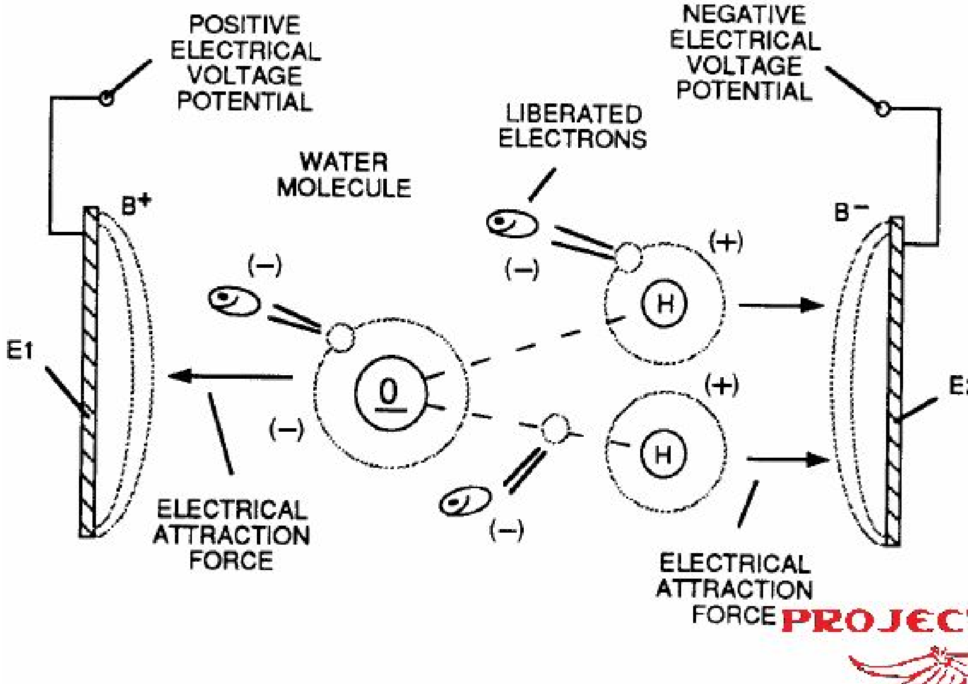


FIGURE 1-9: ELECTRICAL POLARIZATION PROCESS

Dissociation of the water molecule by way of voltage stimulation is herein called "The Electrical Polarization Process".

Subjecting or exposing the water molecule to even higher voltage levels causes the liberated atoms to go into a "state" of gas ionization. Each liberated atom taking-on its own "net" electrical charge. The ionized atoms along with free floating negative charged electrons are, now, deflected (pulsing electrical voltage fields of opposite polarity) through the Electrical Polarization Process ...imparting or superimposing a second physical-force (particle-impact) unto the electrically charged water bath. Oscillation (back and forth movement) of electrically charged particles by way of voltage deflection is hereinafter called "Resonant Action", as illustrated in Figure (1-10).

Attenuating and adjusting the "pulse-voltage-amplitude" with respect to the "pulse voltage frequency", now, produces hydrogen gas on demand while restricting amp flow.

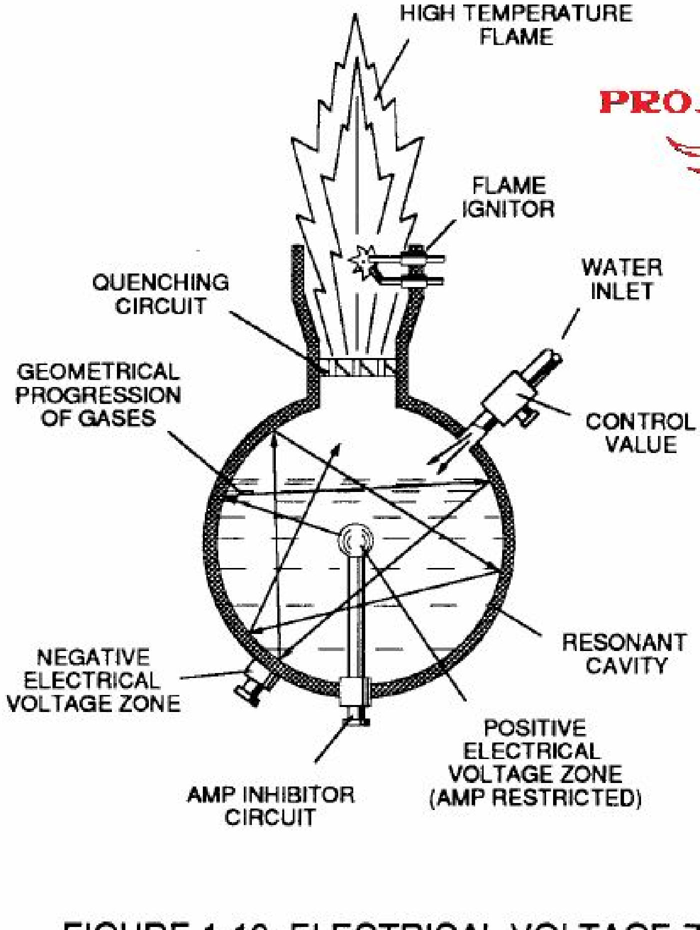


FIGURE 1-10: ELECTRICAL VOLTAGE ZONES
FORMING RESONANT CAVITY

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