A Practical Guide to 'Free Energy' Devices

Part PatE17: Last updated: 24th November 2006 Author: Patrick J. Kelly

This is a patent application from Stephen Meyer, brother of the late Stan Meyer. While this application mentions filling stations, it is clear that the design is aimed at use in vehicles with internal combustion engines. I believe that the impedance-matching interface between the alternator and the cell electrodes is particularly important. The water-splitter cell uses sets of three pipes in a concentric array which results in small gaps between the innermost, middle and outer pipe. Stephen refers to these three electrode pipes as a "wave-guide", so please bear that in mind when reading this patent application. Stephen uses the word "hydroxyl" to refer to the mixture of hydrogen and oxygen gases produced by electrolysis of water. Other people use the word "hydroxy" to describe this mixture, so they should be considered interchangeable.

The operation of this system as described here, calls for the generating power to be removed when the gas pressure in the generating chambers reaches 5 psi. The gas is then pumped into a pressure chamber where the pressure ranges from 40 psi to 80 psi, at which point the compressor is powered down and the excess gas vented to some external storage or using device. It is not until this is completed that the power is applied again to the generating chambers. May I remark that, in my opinion, there is no need to remove the power from at generating chambers at any time when this system is in operation, since all that that does is to lower the generating capacity, unless of course, the production rate is so high that it exceeds the level of demand.

Patent application US 2005/0246059 3rd November 2005 Inventor: Stephen F. Meyer

MLS-HYDROXYL FILLING STATION

ABSTRACT

The usefullness of this system, it's configuration, design and operation, are the keystone of a new type of automation: the production of hydroxyl gases from renewable sources.

BACKGROUND OF THE INVENTION

Fuel Cell and auto industries have been looking for methods and apparatus that can supply a source of hydrogen and oxygen for its new hybrid industry. This invention is such a device.

SUMMARY OF THE INVENTION

The invention is a computerised, automatic, on-site/mobile hydroxyl gas producing filling station which allows the products being produced to be used, either by the hydrogen fuel cells installed in automobiles, trucks, buses, boats and land-based generating applications, or in any internal combustion engine.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig.1 shows the configuration of the components which go to make up the MLS-hydroxyl Filling Station.

Fig.2 shows the software display which the operator uses to monitor and control the production of hydroxy gases and heat.

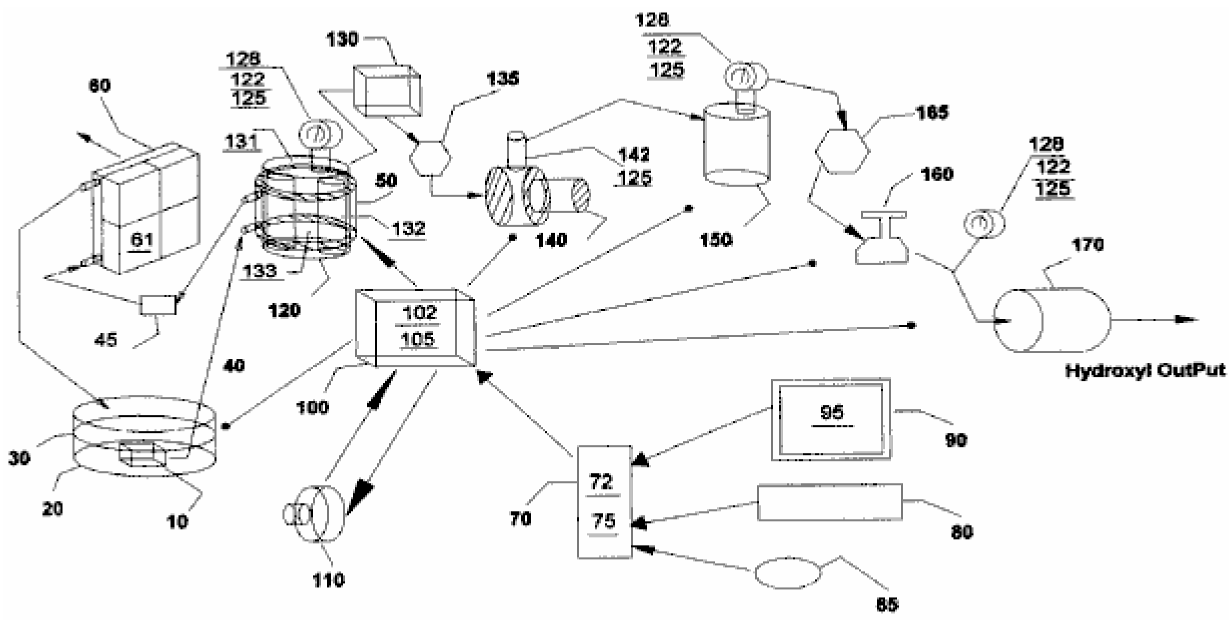
Fig.3 shows the methods, configuration, and apparatus used in the hydroxyl producing cell system **120**.

Fig.4 shows the electronic impedance-matching circuits **102**, connected between the dual three-phase synchronised generators (**110A** and **110B** in **Fig.3**) and each of the electrodes or "waveguide" arrays **132** in cell **120** of **Fig.3**. Note that only generator **A** is depicted in **Fig.4** as being connected to arrays **A**, **B** and **C** using PC cards **1 to 3**. generator **B** is connected to arrays **D**, **E** and **F** using cards **4 to 6**.

Fig.5 Shows the signals emitted by each of the impedance-matching circuits (**102** in **Fig.4** mounted on cards **1 to 6**) which are applied to each of the cylinder arrays (**132** in **Fig.3**) installed in hydroxyl cell **120**. These sets of signals with their offset phase relationship, frequencies and amplitudes, are the driving forces producing the hydroxy gases in cell **120** of **Fig.3**.

Fig.6 shows the high-frequency ringing signal which is produced between points **T1** and **T2** in the impedance-matching circuit **102** in **Fig.4**. It is this ringing which enhances the production of the hydroxyl gas in cell **120** of **Fig.3**.

DETAILED DESCRIPTION OF THE DRAWINGS



MLS- Hydroxyl Filling Station (MLS-HFS)

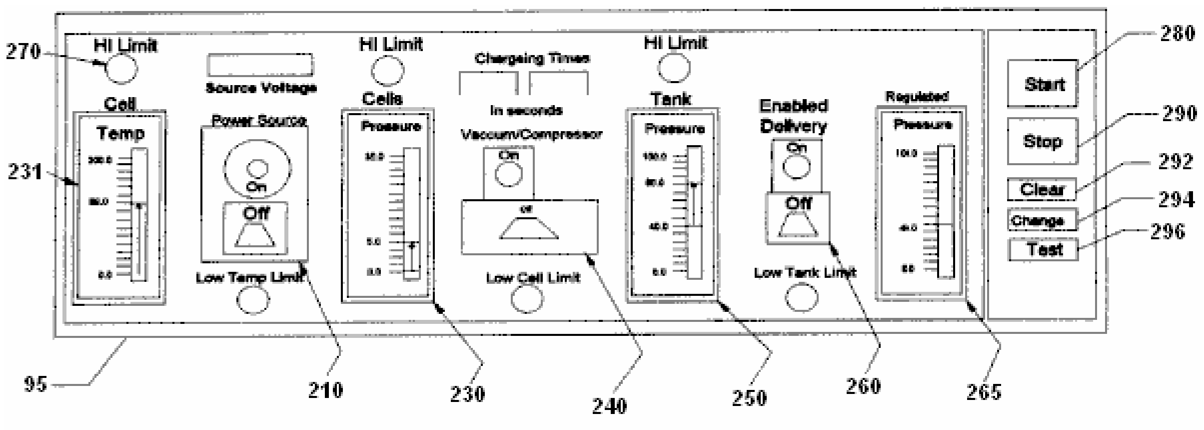
Fig 1

The heat-removing section in **Fig.1** consists of a liquid bath **30** and its container **20**, a liquid circulating pump **10**, conveying-conduits **40**, cooling chamber 50 attached to hydroxyl generating cell **120**, filter **45**, radiator **60** and cooling fans **61** attached to it.

The automatic-control section in **Fig.1** consists of a computer **70**, software program **75**, video monitor **90** and it's graphic operator display **95** (**Fig.2**), pointer **85**, keyboard **80**, interface card **72**, and Input/Output controller **100** with it's driver electronics cards **102** and **105**.

Dual three-phase power sources **110** and impedance-matching circuits **102**, provide the power needed to drive the hydroxyl cell **120**.

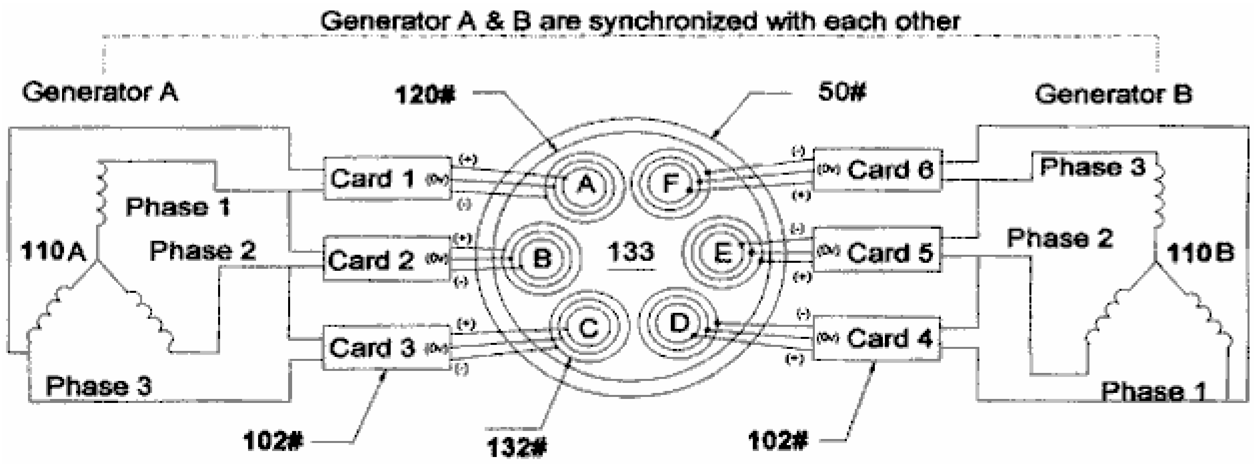
The remaining apparatus is used to convey the gases from cells **120**, through liquid trap **130**, through gas flow restriction valve **135**, elevate its gas pressures through compressor **140**, transfer them to storage tank **150**, then deliver the gases through safety cut off **165**, regulators **160** and through flash-back arrestor **170** for external delivery.



MLS-Hydroxyl Filling Station (MLS-HFS) Graph Display and Operator Control

Fig-2

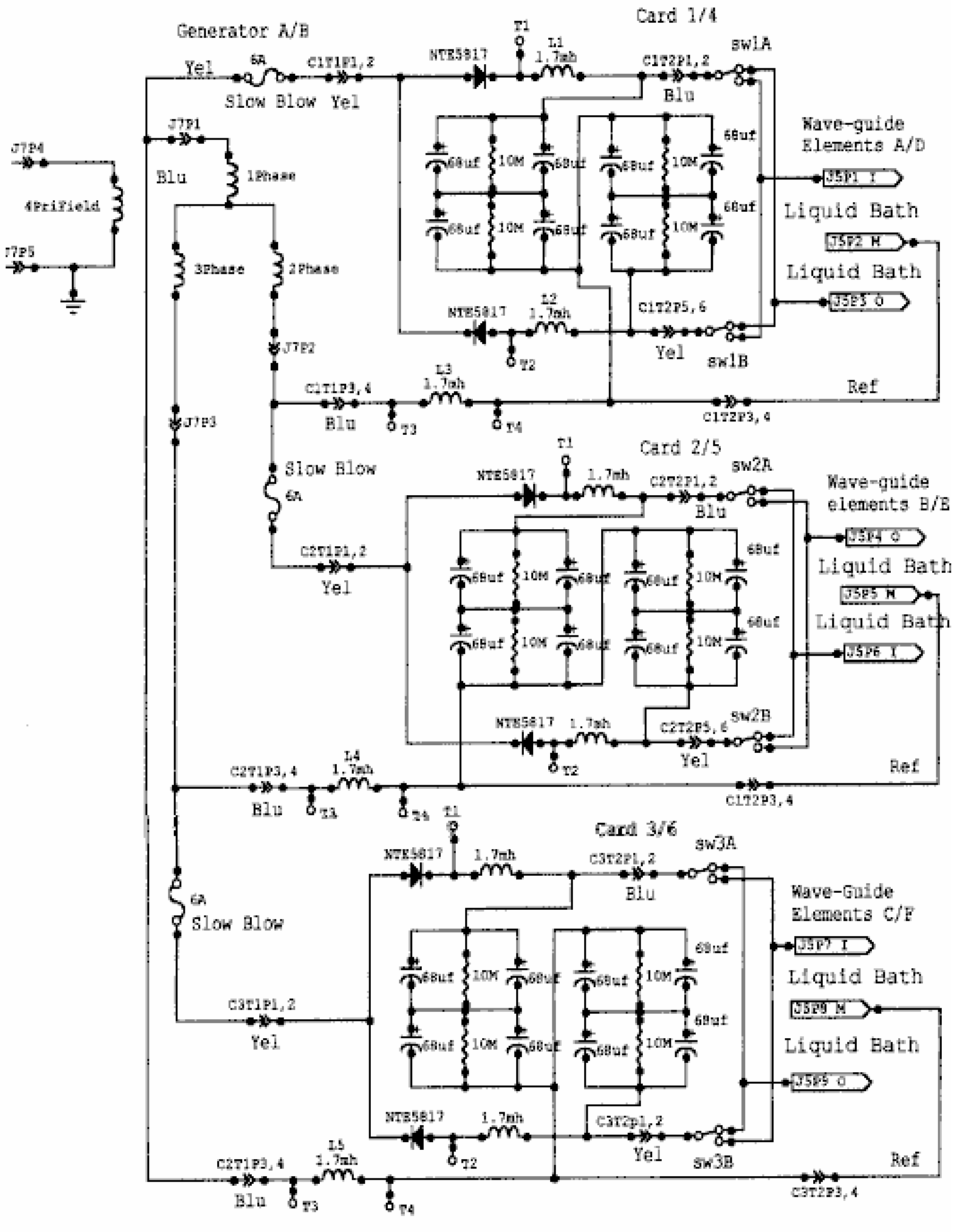
Fig.2 shows the layout and functions of the operator control display **95** of program **75** in **Fig.1**. It consists of cell temperature indicator **230**, vacuum controller **240**, high-pressure tank indicator **250**, delivery controller **260**, delivery regulated-pressure indicator **265** and related alarm/status indicators **270**. Also, software control buttons are provided to start **280**, stop **290**, clear data **292**, change setting **294** and the testing of equipment and their sequences **296.**



Configuration of Hydroxyl gas producting appartuses

Fig-3

Fig.3 shows the configuration of our proprietary hydroxyl-producing apparatus **120** consisting of dual three-phase power source **110**, impedance matching electronic circuits **102** and gas converter devices **132** submerged in a bath of water **133** in cell **120**. The drawing also shows the water jacket **50** surrounding the cell **120** that helps lower its temperature and allows more production of the hydroxyl gases at higher voltage signals as shown in **Fig.5**.



Impedance matching circuits 102

Fig-4

Fig.4 shows the electrical circuits **102**, used to drive the gas converting arrays (**132** in **Fig.3**) submerged in a bath of water **133** in cell **120**. **Fig.4** shows three identical circuits connected to each of the three-phase signals from one half of the dual three-phase generator **110A** in **Fig.3**. The circuits **102,** convert the AC signal from each phase of **110** into a modulated signal as depicted by **Fig.5**. These signals are then coupled to the triple array elements **132**, (Inside, Middle and Outside) by alternating the connection between the Inside and Outside elements of the arrays (**132** in **Fig.3**).

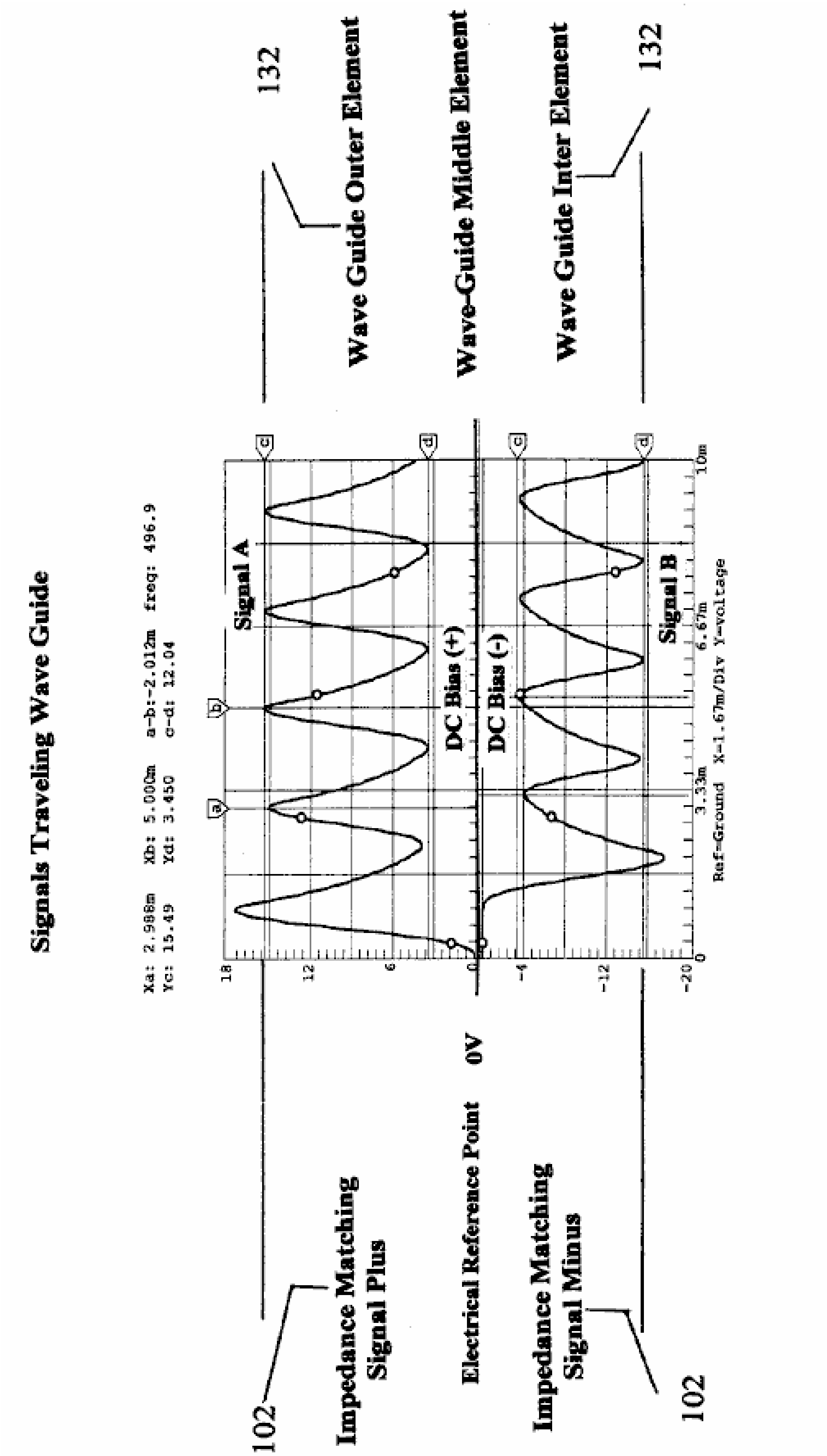


FIG-5

Fig.5 shows the composite signals applied to each of the arrays (**132** in **Fig.3**) submerged in the water bath **133** in cell **120**, and indicates the differential voltages used in the hydroxyl producing process. Note that the Middle wave-guide element is used as the electrical reference point for both the Outside and Inside elements of array **132**. It is this composite signal applied to the surface of the stainless steel elements in array **132**

submerged in water bath **133**, heat allows the ions from the elements in array **132** to cross its water surface barriers **133** and contribute to the hy-droxyl production. Note the DC bias voltage +,- on either side of the centre electrical reference point 0V. It is this bias voltage being modulated by multi-polarity differential signals from **102**, that contributes to the wave-guide action of arrays **132**. Also, the frequency of the waveform shown in **Fig.5** is adjusted to match the electrical wavelength of the arrays **132** of **Fig.3** and the impedance of water bath **133**.

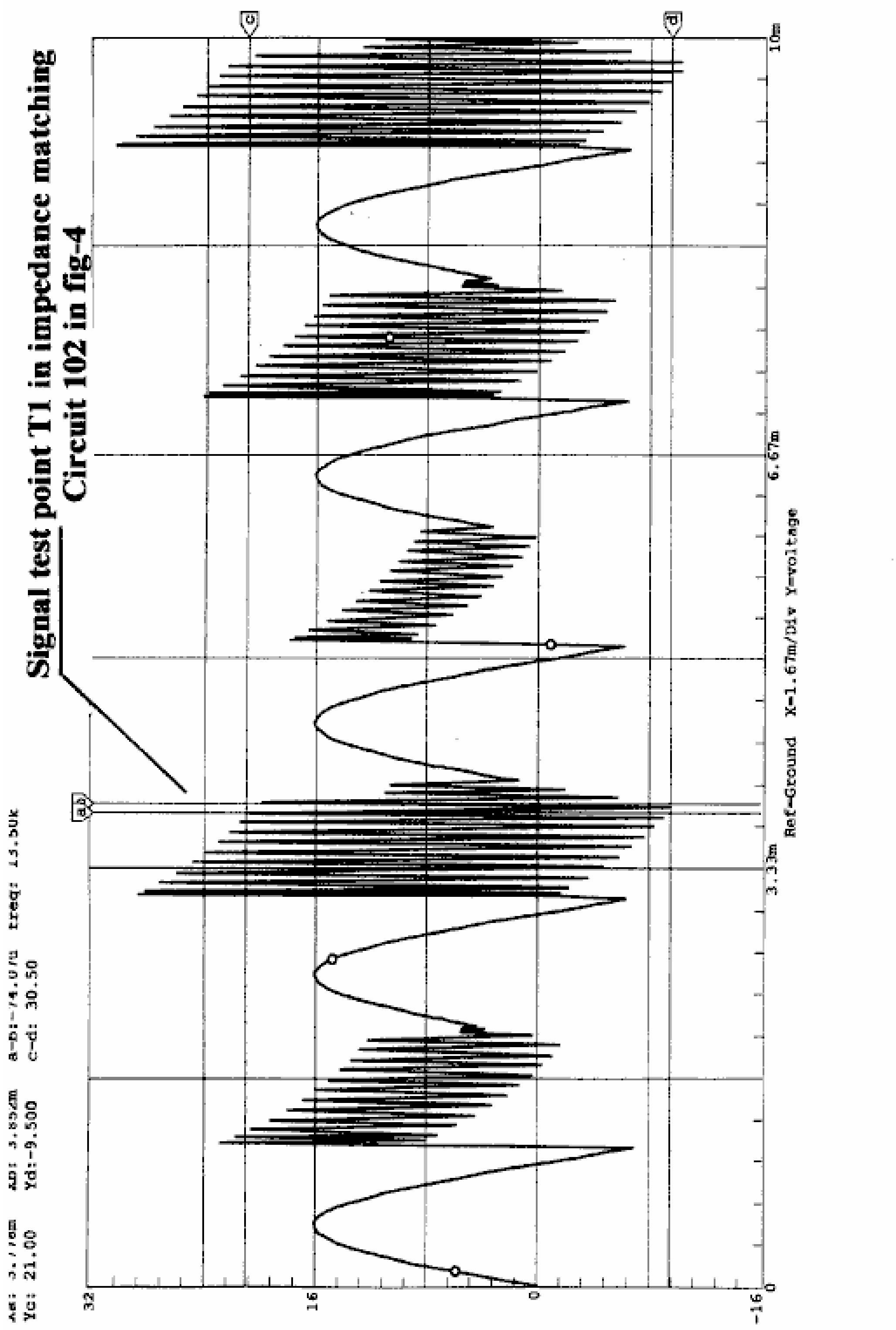


FIG-6

Fig.6 shows the high-frequency ringing signals which contribute to the operation of the hydroxyl production. just as a tuning fork rings when struck by a hammer, so do the wave-guide elements in array **132** immersed in the hydroxyl-generating liquid **133** when struck by the electrical signals shown in **Fig.5** and **Fig.6**, coming from the impedance-matching circuits **102** shown in **Fig.4**.

Brief Description of Sequences:

This invention is a computerised Hydroxyl Gas producing filling station "**MLS-HFS**" designed to provide automatic control of its on-site gas production and delivery.

The MLS-HFS shown in **Fig.1**, is a hydroxyl gas and heat generating system which uses a renewable source of liquid supply **30** such as water. It uses a computer control program **75** with display interface **95**, for the monitoring, adjusting and controlling of the electronic and hardware apparatus and process logic. The electronic circuits **102** mounted in driver **100**, control the production of the gases and heating while circuit **105** controls the process and routeing of the hydroxyl gas.

The system consists of a low-pressure hydrolyser cell **120** in **Fig.1**, a liquid trap **130**, an adjustable flow-restriction valve **135**, high-pressure vacuum pump **140**, and check valve **142** installed in **140**. It also contains a high-pressure storage tank **150**, an alarm/low-pressure cut-off valve **165**, gas regulator **160**, flashback arrestor **170**, over-pressure safety release valves **125**, pressure gauges **128**, analogue pressure-sending units **122** installed on cell **120**, and tank **150** at the regulating side of regulator **160**. Also, **125** is installed on Compressor **140** high-pressure output. The computer controller **70**, monitor **90**, keyboard **80**, interface I/O card **72** and software position pointer **85**, are used to control the production process, using electronic driver **100** through it's PC boards **105** and their attached control devices. The power to the cell-driving circuits **102**, installed in driver **100**, is supplied from a dual three-phase isolated power source **110**. The amplitude, signal phases and frequency from this power source is controlled by signal adjustments coming from the computer **70**.

Detailed Description:

Sequence of Operation:

The system shown in **Fig.1** is monitored and controlled by the software program **75**, computer **70**, monitor **90**, keyboard **80**, pointer **85**, and display interface **95** in **Fig.2**.

The software program has five main functions, namely: to purge the system of ambient air, check and test for any equipment malfunctions, prepare the system for production, monitor and control the current activities of the production process, and the safety shutdown of the system if alarms are detected.

During the initial installation, and again after any repairs, the total system is purged using the vacuum pump **140**, using manual procedures to ensure that all ambient air has been removed from the system. Before the system is put into service, the operator can test the operation of the system by using the graphic display. The main functions of the testing is to ensure that the temperature electronics **131** attached to the hydroxyl cells **120**, transferring compressor **140** and analogue pressure sensors **122** mounted on cells **120**, high-pressure tank **150** and the discharge side of regulator **160** used for control and monitoring, are working properly. the operator can then activate the Run Sequence of the program **75** via the start software button **280** in **Fig.2** on graphic display **95**.

During the initial startup phase of the system, the computer program will configure the system for the purge sequence. this sequence allows the vacuum pump **140** to draw down the hydroxyl cells **120** liquid trap **130** coupled to flow-restriction valve **135**, to remove all ambient air from them. Once the program has done this and detected no leaks in the system, it then prepares the system for gas production by switching the gas flow from cells **120** to high-pressure tank **150** and on to the output flashback protector **170**.

The program starts it's production sequence by turning on the cooling system pump **10** which is submerged in the liquid bath **30**, contained in vessel **20**. The cooling liquid is pumped through the cooling jacket **50** which is attached to the outside of cells **120**, through filter **45** and then through an air-cooled radiator **60**. Fans attached to the radiator are turned on for cooling.

Next, the computer turns on the dual three-phase power source **110**, which supplies operating power to the frequency, phase-shifting, signal amplitude and impedance-matching circuits coupled to the hydroxyl generating cells.

The result of this is just like the operation of a radio transmitter matching it's signal to the air via the antenna impedance. **Fig.3** shows the relationship of this configuration to arrays **132**, water bath **133** and Signals (**Fig.5** and **Fig.6**).

While the power source **110** is operating, the computer **70** is monitoring the pressure **122** and temperature **131** of hydroxyl cells **120**. When the cell pressure reaches a typical level of **5** pounds per square inch, the power source is turned off and compressor **140** is turned on the pump the gas into pressure tank **150**. When the pressure in the hydroxyl cells **120** is drawn down to near zero, the compressor is turned off and the power to the gas generating cells is turned back on again, to repeat the cycle.

The production cycle is repeated until tank **150** reaches a pressure of, typically, 80 psi, at which time the computer enables the output pressure regulator **160** which is typically set to operate at 40 psi, for the delivery of the hydroxyl gas to some external storage system or device. During this operation, the computer program handles all switching and displays the current status and any alerts or warning messages for the operator on the graphical display **95**.

Impedance-Matching Circuit 102:

The impedance-matching circuits **102** in **Fig.4**, convert the sinewave signals coming from the three-phase power source (**110** in **Fig.3**) into multi-polarity differential signals (**Fig.5**) which are applied to the triple wave-guide cluster arrays **132 A, 132B, 132C, 132D, 132E** and **132F** installed in cell **120**.

It is this converted signal, along with the phase relationship of the power source **110** and the triple wave-guide elements in cluster **132** submerged in water bath **133**, which produce the hydroxyl gases. It is important to note that not only is the gas produced between the elements in the array, but also between each array installed in the cell - see the phase relationship of array **A-B-C** shown in **Fig.3**. Also note that the array elements themselves are supplying many of the ions needed for the production of the gases.

Sequence of Hydroxyl Gas Generation:

Once the hydroxyl-generating cell **120** has been purged of ambient air and the production routing completed (**Fig.1**), the dual three-phase power source **110** is activated, supplying frequency, amplitude and phase signals to the impedance-matching circuitry **102**. The converted signals from **102** are then applied to cell array **132** for processing. It is the combination of the impedance-matching circuits signal transformations (as shown in **Fig.5** and **Fig.6**), the cell configuration and materials used in arrays **132**, and the rotational phase relationship between arrays **AD**, **BE** and **CF** and the submersion of these arrays in a bath of water **133**, that allows this system to produce large amounts of hydroxyl gases. The computer program 75 and it's graphic display **95**, is used by the operator to adjust the rate of gas production and set the upper limit to which the low-pressure cell **120** will charge.

After the cell **120** has reached its upper pressure cut-off limit (typically 5 psi), the power source **110** is turned off, enabling the compressor **140** to start its draw-down and transfer of the gases to the high-pressure tank **150**. When the pressure in the cell **120** reaches a low-level limit (near zero psi), **140** stops its charging cycle of **150**. Check valve **142** which is installed in **140**, prevents any back flow of gases to **120** from high-pressure tank **150**. The power source **110** is then turned back on to repeat the cycle. These charging cycles continue until the high-pressure tank **150** reaches it's upper pressure limit (typically 80 psi), at which point the hydroxyl production is stopped. As the gases in the high-pressure tank are being used or transferred to some external storage system, the pressure in **150** is monitored at the output of pressure-regulator **160**, until the low-pressure limit for this tank is reached (typically 40 psi). When this pressure level is reached, the hydroxyl gas production is started again.

During the operation of cell **120**, it's temperature is monitored to ensure that it does not exceed the "out of limits" conditions set by control **231** and monitored via the graphics display **95**. If the temperature exceed the limit set, then the gas production is stopped and the computer program alerts the operator, indicating the problem. The cooling system **30** which uses water jacket **50** surrounding cell **120**, helps to reduce the temperature and allows higher rates of gas production.

After extended running times, the water in cell **120** is replenished from bath **30** and filtered by **45**, to help control the operating impedance of the cell.

CLAIMS

1. The MLS-HFS information in this specification is the embodiment of the claims.

2. The system according to Claim 1 further enhances the production of hydroxyls based on the configuration of the hydroxyl gas-producing apparatuses of **Fig.3**.

3. The system according to Claim 1 further enhances the production of hydroxyls based on the configuration of the impedance-matching circuits of **Fig.4**.

4. The system according to Claim 1 further enhances the production of hydroxyls based on the application of the electrical signals shown in **Fig.5** applied to signal travelling wave-guides **132** submerged in a bath of water **133** installed in cell **120** and configured as depicted in **Fig.3**.

5. The system according to Claim 1 further enhances the production of hydroxyls based on the resonating action of the electrical signals depicted in **Fig.6**.

6. The system according to Claim 1 further enhances the production of hydroxyls based on the software program's ability to control the production of hydroxyl gases; controlling it's process limits, controlling it's storage and controlling it's delivery via operator controller **Fig.2**.

7. The software program **75** according to Claim 6, further enhances the safety of the production of hydroxyls based on the monitoring of high and low limits and either alerting the operator of the conditions and/or stopping the production on device failures via operator controller **Fig.2**.

8. The software according to Claim 6 further enhances the safety of the hydroxyls based on its ability to purge the system of ambient air before starting the production of hydroxyl gases.