SPACE ENERGY FOR A GREEN CLEAN WORLD

New Energy News

Monthly Newsletter of the Institute for New Energy

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THE GOOD NEWS AND THE BAD

GOOD NEWS: JAPAN AND ENGLAND FUND NEW ENERGY PROJECTS
BAD NEWS: THE U.S. DIDN'T

We are delighted to report that a "large Japanese firm" (believed to be the firm that is involved with Yasunori Takahashi's work) has made contractual arrangements with Robert Adams to assist in the development of magnetic motors. See page 10 of this issue. We are pleased that after many years of lonely development work by Robert Adams, he has gained support for his work. *NEN* readers will remember that the magazine *NEXUS* published an extensive article about Robert Adams work. Here is a case where developments that are deemed to be unacceptable to the current model of reality have a difficult time in getting either government or corporate support. Regardless of the various opinions as to the value of Adam's work, we are pleased that Adams has received recognition for his many years of efforts to improve electric motors.

We are also pleased that our friend, Dr. Harold Aspden, has received a grant from the British government to further his work on magnetic anomalies. When Dr. Aspden was working on his doctoral project he discovered special magnetic anomalies. He could demonstrate the results of his work to his doctoral committee so that there was no question that the anomalies existed. However, because these anomalies were not in conformance to the **current scientific models of reality,** Dr. Aspden could not get his results published in peer-reviewed journals. After some years when new journals were founded, such as *Speculations in Science and Technology*, Dr. Aspden was able to get his discoveries published.

Many of our *NEN* readers have had similar problems. Many of you have been working for many years in **the new energy underground**. In 1993, thanks to donations from Lynda and Bill Beierwaltes and with the support of the International Association for New Science, a number of **energy undergrounders** were invited to attend an energy retreat. The retreat in 1993 was followed by the first International Symposium on New Energy; the formation of the **Institute for New Energy**; the publication of the monthly newsletter *New Energy News*; a second **energy undergrounders** retreat in 1994; the second International Symposium on New Energy; and now by these two latest developments from Japan and England for the funding of new energy projects.

The good news is that you stalwarts who firmly believed that there must be a better way to develop and use energy have persisted in your strange beliefs. George Bernard Shaw said, "The **reasonable** man adapts himself to the world. The **unreasonable** one persists in trying to adapt the world to himself. **Therefore, all progress depends on the unreasonable man."** The better news is that you are no longer alone. Some of the energy experts whom we have met have believed that they were the only one doing such **unreasonable** work. Now they know that they are not alone, there are many others, they are exchanging ideas, and we here at *NEN* are doing our best to serve as the courier of these ideas, developments, and reports. **Now, the best news is that we, the new energy specialists**, are emerging as members of a new group of technicians, engineers, and scientists **who are achieving some degree of acceptance.**

The bad news is that we are still rejected by most of the scientific community in the United States because we are making discoveries that are contrary to the currently accepted doctrine. For example, **if** there is no energetic ether, **then** most of the new energy devices that are proposed or that are being developed **are contrary to the Law of Conservation of Energy.** Most scientist when confronted by something that is seemingly contrary to this law will dismiss it as foolishness. **However, if we accept the concept of an energetic ether, then new energy devices become nothing more than clever energy transformers and the Law of Conservation of Energy is preserved.**

The worse news is that it is only with great difficulty that we are able to penetrate this barrier of understanding on the part of most of the engineering and scientific community. As Dr. Hal Puthoff has nicely stated, we need the one-watt demonstration. You may remember "The One-Watt Challenge" that we must be able to repeatedly and assuredly demonstrate that we can get at least one more watt out of a device than is being used as input energy. Or better: We

need to demonstrate larger watt-hour output than watt-hour input (to put the statement in terms of power).

The worst news is that the United States is one of the most stubborn bastions of scientific doctrine. This stubbornness to view new energy developments with an open mind is, in essence, the denial of many new discoveries. The scientific society then becomes defenders of the faith rather than the discoverers of new science. Our challenge is to pool our efforts, our money, and our sacred honor (to paraphrase Thomas Paine) to advance the developments of new energy devices and/or systems so that demonstrations can be made to those skeptics who are willing to observe.

Over fifty years ago, in a *Reader's Digest* article, I read about DeKalb and his troubles in developing hybrid corn. He was led to success by following this memory gem: "On the Plains of Desolation bleach the bones of countless thousands who, at the Dawn of Victory, sat down to rest, and resting, died!" I don't remember the author but I do remember the lines. The concept is just as good today. **Energy undergrounders, and you who have more recently joined the battle, don't rest now!**

Editorial

SONGS OF THE CAN'T-ERS

Man's progress has many times
At first just been rejected.
Then when it is obvious
New things gets accepted.

Replace my whale oil with
Black stuff from the ground?
A substitute for my lamp
Never will be found.

Edison's new light bulb?
I'd rather buy a load of mud.
Gas lamps are still great.
Electric lights will be a dud!

"Those Wright Brothers
They can't fly
Any more than I."
The Can't-ers cry.

What, rocket through space?
Goddard, we are incensed!
Everyone knows, there's
Nothing there to push against!

Energy from the atom?
Why that's insane!
Don't those numbskull scientists
Even have a brain?

Radar waves detect warplanes
Farther than I can view?
Don't bet on that solution,
We'll throw you off the crew.

Missiles jump over nations
And fly across the sea?
I'm an aero-space expert.
Don't pull that stuff on me!

Pons and Fleischmann's fusion?
A chemical phenomenon?
MIT says it won't work,
Unless it's in or on the sun!

Light water gives cold fusion?
Mills sent his brains for slaughter?
You know you can't get fusion
Unless using heavy water!

Sure! Bush and Eagleton
Are making transmutations!
Don't you ever believe it.
It's just some aberrations.

Energy obtained from Space,
And to a great degree?
Ha! Puthoff is playing games.
Space has no energy!

Tapping vacuum energy?
You must think that I'm a klutz!
Making electron clusters?
Ken Shoulders must be nuts!

Progress is only made
If we ignore this banter.
Think what this world would be
Listening to the can't-er.

Once we all accept this truth
Our knowledge will be newer.
Progress is not made by a
Can't-er; **ONLY BY A DO-ER!**

Fusion Briefings

NEW ASPDEN PATENT FOR 1994
Courtesy of Dr. Harold Aspden

UK Patent GB 2,278,491-A; "Hydrogen Activated Heat Generation Apparatus;" Harold Aspden, published Nov. 1994, priority date 25 May 1993. In order to research the generation of heat by promoting the fusion of protons or deuterons adsorbed by a host metal, the apparatus provides a structural configuration by which the direction of heat flow through the metal is transverse to the direction of an applied magnetic field. Thermal priming means, which may include pre-cooling on the heat output side or electrical heating of the host metal, provide the initial temperature gradient triggering fusion. Alternating current activation of the magnetic field, the intensity of which may be enhanced by using nickel as the host metal, combined with a non-uniformity of the magnetic field and/or heat flow through the metal, assure the abnormal presence of a residual negative electron population in the metal. Such charge nucleates the merger of positive charge and enhances the fusion process.

[Dr. Aspden says that this is a 42 page patent disclosure published with the results of the patent examiner's search findings: the only search articles cited comprise two granted UK patents already assigned to ENECO by Dr. Aspden. International patent cover is being processed by ENECO.]

TINY BUBBLES IN THE.... FUSION
Courtesy of Jed Rothwell

Malcolm W. Browne, "New Shot at Cold Fusion By Pumping Sound Waves Into Tiny Bubbles," *Science Times* section of *New York Times*, Dec. 20, 1994, page D1 & D8, illus.

EDITOR'S COMMENTS

Browne's article discusses some of the most recent work of Dr. Seth Putterman at UCLA. As reported, the more recent work on sonoluminescence has achieved higher temperature levels than previously obtained. While Putterman works with single bubbles, Dr. Kenneth Suslick, a chemist at the University of Illinois (Champaign-Urbana) has produced clouds of bubbles. The bubble temperature produced is inferred by the light emitted from the sonoluminescence. The article suggests that it may be possible to create high enough temperatures so that the fusion of deuterium can be achieved. It is noted that "this process must join together atoms of isotopes of hydrogen (either deuterium or a mixture of deuterium and tritium -- the same mixture that fuels hydrogen bombs). This combination yields helium nuclei and tremendous amounts of energy." The author later states that no neutrons have been detected. Also, the article addresses the problem of getting bubbles of hydrogen or hydrogen isotopes to produce sonoluminescence. The process which might be able to produce excess energy is compared with the process where glass spheres are used in inertial confinement hot fusion.

It is interesting that Malcolm Browne fails to mention that E-Quest has been producing nuclear by-products (as measured by scientists at the Los Alamos energy research laboratories) using the sonoluminescence phenomena at or near the surface of a metal (such as palladium). In addition, Browne makes no mention of the paper by Julian Schwinger in which he suggests that the Casimir effect may be responsible for the forces which collapse the bubble so violently. Of course, the Casimir effect is a by-product of an energetic space and the E-Quest experiments suggest the reality of **cold nuclear fusion**. Neither of these two concepts are acceptable to the classical hot fusion community. **This article is an impressive demonstration of how one can select facts so as to avoid any acceptance of either the concept cold fusion or an energetic space.** Rather, the projected use of sonoluminescence is associated with high temperatures (of the collapsing bubble) and therefore, the possible similarity to inertial confinement. The concept of the catalysis of nuclear reactions on or near the surface of a metal lattice can be used to explain "sonofusion" as well as much of the large body of experimental data for cold fusion. However, we are pleased that the prestigious *New York Times* would use the term "cold fusion" and publish an article without the usual attack on Pons and Fleischmann. Maybe, just **maybe, this act of journalism heralds a gentle recognition of the continuing advances that have been and are being made in cold fusion technology.**

WARM & HOT FUSION
Courtesy of the author

Charles Bennett, "Fusion Overkill" and "The DOE STrikes Back," flyers mailed to many major periodicals, U.S. Representatives and Senators.

OVERVIEW OF FLYERS

The Lawrence Livermore National Laboratory has announced plans for a 1.8 billion dollar project to produce fusion energy by activating deuterated micro-pellets with powerful lasers. I first disclosed a strikingly similar concept called "warm fusion" to the Raytheon Company on March 24, 1989. After issuing an inventors award to me entitled, *"Nuclear Fusion Candle, April 1989,"* Raytheon deeded the rights to me. I filed a patent with the U.S. Patent Department on May 10, 1990, entitled *"Lukewarm Fusion."* The patent department did not accept it because they said it was unworkable. Now the Department of Energy has decided to test their own version at a much greater cost!

"I publicly disclosed the concept in a speech to the Peninsula Chapter of the California Society of Professional Engineers at the January 27, 1994 meeting. In the speech, I described a "warm fusion furnace" with micro-pellets of metal deuterated under cryogenic conditions as the fuel. The metal lattice holds the deuterium for ignition without the need for powerful magnetic fields. The ongoing heat from the furnace allows continued self-sustained fusion **so that the enormously high amount of powerful lasers proposed by LLNL for the initial ignition mechanism is not needed! This is overkill!!!**

In warm fusion, the metal lattice damps the ignition to cool down from hot fusion temperatures and is safely maintained as the pellets are continuously fed into the combustion chamber. The heat powers steam turbines that generate electricity. This is the basis for the name "warm fusion."

The opening remarks of the speech state: *"Warm fusion is a hybrid between cold fusion and hot fusion. The temperatures of operation are much higher than the laboratory room temperatures of many current experiments of the so called "cold fusion" but nowhere near the extremely hot temperatures and high pressures of the hydrogen bomb."...*

The Department of Energy has responded to my proposal for an experiment to test the concept of "warm fusion." A rejection was expected but not one that was so arrogant, presumptuous and reactionary. The following is an analysis sent by the Division of Advanced Energy Projects, Office of Basic Energy Sciences:

"The proposal includes arguments that rely on a number of unverified physical concepts. The notion that heating a cold fusion device leads to a new type of mass-energy conversion has never been shown. The existence of the Q particle and a different medium besides the space-time continuum for physical processes are unproven concepts in physics. The experiment proposed is very, large in scale and not justifiable in the absence of previous experimental proof of an effect. Also, references to work involving hydrogen in nickel are not cited or discussed in detail. In summary, the proposal involves a number of highly speculative assumptions. The failure of any one of these assumptions destroys the overall concept.

"The principal investigator is trained as a mechanical engineer. There is no evidence of training, experience, or publications in the areas of elementary particle physics, plasma fusion physics, or relativity and cosmology. All these fields are referenced in the proposal

"Finally, the budget of $l.65M over two years is beyond the scope of projects supported by the Division of Advanced Energy Projects."

The philosophy contained in the above statement suggests that new thinking is not allowed. The analysis also demands that required credentials be in disciplines that have denounced new innovations such as cold and warm fusion. Furthermore, the DOE refuses to fund cold/warm fusion so they can perpetuate claims of "no proof." This is a "catch 22."

This is an example of one of many reasons that the American public is so mad at the government. First, the bureaucracies thrash a new idea with an unsubstantiated chain reaction of frivolous attacks. Then they revamp the idea to make an overblown expensive version of their own.

Chuck Bennett, Oct. & Nov. 1994, Sacramento, California (916-368-6859)

The Peer Review Process
or, a physicist and his peers contemplate cold fusion.
With apologies and thanks to Robert Longo, for his sculpture Corporate Wars.

Space Energy

YES, ARTHUR C. CLARKE, YOU'RE RIGHT
Courtesy of Hal Puthoff

Arthur C. Clarke, "Space Drive: A Fantasy That Could Become Reality," *Ad Astra*, Nov/Dec 1994, page 38.

EDITOR'S COMMENTS

In this short article, Arthur muses, "I cannot help wondering if quantum fluctuations (also known as Zero Point Energy) explain some of the baffling and bizarre results reported by advocates of so-called **cold fusion** such as Drs. Pons and Fleischmann, who claimed in 1989 to have produced nuclear energy in a test tube at room temperature." Very inciteful, Dr.

Clarke. At least three scientists who have contributed to the extensive cold fusion literature and developments have stated that ZPE is expected to play a role in cold nuclear fusion processes. The late Julian Schwinger, Robert T. Bush, and Robert W. Bass have also recognized that the existance of energetic "quantum fluctuations" could have a dramatic impact on nuclear activities on or within a metal lattice. Clarke concludes by pointing out that the typical reponses to new and revolutionary concepts range through "1. It's crazy! 2. It may be possible - so what? 3. I said it was a good idea all along. 4. I thought of it first!"

Based on the recent discussions of Haisch, Rueda and Puthoff (*Physical Review A*, Feb. 1994) about inertia being a product of the Lorentz field force (ZPE), Clarke suggests that a new and revolutionary idea about the possible control of gravity and inertia may be considered. When energy can be derived from the energetic ether, then the major energy problem may be one of heating up planet earth. So plan to teach your kids to turn off the cosmic energizer when not is use. A few billion Joules here and there can run into real energy waste.

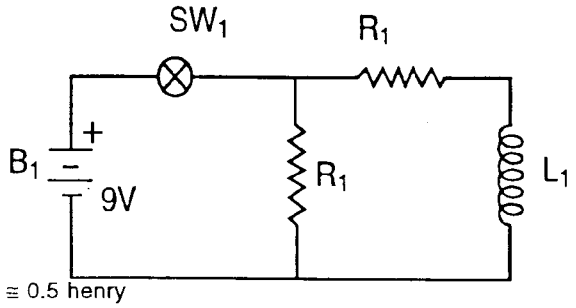
COSMOLOGY NOTE

By Greg Hodowanec, G.H. Labs, Newark, NJ

I. The "Free Energy" experiment of 2/23/94 revisited.

In this simple experiment a small rectangular coil of about 0.5 henries (which was removed from an iron choke coil of 10 henries) was pulse 'charged' directly across the 500 k ohm input of my vintage oscilloscope. In that rough test I assumed an approximately equal time constant from the 'charge' and 'discharge' cycles. It was pointed out by colleague Alastair Couper that the 'charge' cycle time constant would be somewhat longer than the 'discharge' cycle. While I agree with this, it really did not affect the conclusion reached in that experiment: that the energy content of the output pulse was somewhat greater than the energy needed to initiate the input pulse.

A. The 'charge' cycle:



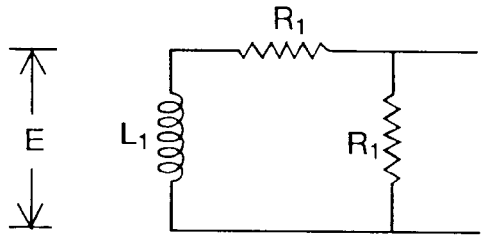
$L_1 \cong 0.5$ henry
$R_1 \cong 500$ K (scope input resistance)
$R_2 \cong 6$ K (resistance of L_1)
$B_1 = 9$-volt battery

$T_{L1} = L_1/R_2 \cong 0.5/6 \times 10^3 \cong 0.083 \times 10^{-3} \cong 83$ microsec.

(DC) $iL_1 = B_1/R_2 \cong 9/6 \times 10^3 \cong 1.5 \times 10^{-3} \cong 1.5$ mA (max.)

When SW_1 is closed, the coil L_1 will 'charge' up to about 63% of the 9-volt battery in about 80 microsec. The maximum current in the coil will not exceed 1.5 mA. While SW_1 remains closed, the maximum H-field in space is established by this maximum current of 1.5 mA.

B. The 'discharge' cycle:



$E_{out} = E = L\ di/dt \cong \Delta i/\Delta t\ L$

The time constant cannot be given directly here by L_1/R_2 since the space magnetic flux returns to coil L_1 essentially instantaneously when SW_1 is opened. However, a time constant will still be involved since coil L_1 is loaded with both R_1 and R_2. Experimentally, the time constant in 'discharge' was found to be about 1/4 the 'charge time constant or about 20 microsec. This was determined through the oscilloscope.

C. Flux interaction:

In orthodox EM theory, the maximum current which could be reintroduced (induced) in the coil L_1 would be only the 1.5 mA used to establish the original H-field in space. Thus, the peak

$$E = L\frac{di}{dt} \cong L\frac{\Delta i}{\Delta t} \cong \frac{0.5 \times 1.5 \times 10^{-3}}{20 \times 10^{-6}} \cong 0.5 \times 0.075 \times 10^3 \cong 37.5 volts$$

where Δt was that found in scope measurements. But the peak voltage as measured on the scope was found to be in the order of 250 volts, or a factor 6.7 times greater! The only possible 'error' here would be in the assumed maximum peak for Δi of 1.5mA. Now, rhysmonic theory shows that the return flux could also include some additional flux which would be 'extracted' from the earth's g-field. Thus in rhysmonics, the peak Δi could be that factor of 6.7 times the initial DC current of 1.5mA or about 10mA! Now,

$$E = L\frac{di}{dt} \cong L\frac{\Delta i}{\Delta t} \cong \frac{0.5 \times 10 \times 10^{-3}}{20 \times 10^{-6}} \cong 0.5 \times 0.5 \times 10^3 \cong 250 volts$$

which is the actual peak voltage as measured on the scope.

Allowing for the differences in time constants between the 'charge' and 'discharge' cycles, the adjusted averaged current in the 'discharge' cycle may be about 10/4 only times the input current level. Therefore, the averaged current level present in coil L_1 (as developed by the return flux from space) would be about 3.75 mA, which is still about 2.5 times the current provided by battery B_1 to form the original H-field in

space. In rhysmonic theory, the additional return flux is believed to have been supplied by an additive scalar flux interaction with the earth's g-field scalar flux. I had always speculated that the return flux would be at least two times the initial flux and that it could be much higher in special cases. There is room for much more research here.

II. Conclusions:

The simple experiment of 2/23/94 (and others at previous times) continue to show that the use of coils may be a valid technique for extracting the latent space energy, primarily from the earth's g-field in this particular case. It would be nice if more of you actually try the experiment and determine if this is real or not. --Greg H.

EDITOR'S COMMENT

Greg's references to rhysmonic theory is to a theory not generally accepted in current scientific literature.

KEELYNET BBS

The following paper was taken off of KEELYNET, a FREE Alternative Sciences BBS sponsored by Vanguard Sciences. KeelyNet may be contacted at P.O. 870716, Mesquite, TX 75187. Dataline is 214-324-3501. KeelyNet is an active discussion place for all interested or involved in Alternative Sciences, and many papers are placed on it for the public to read. It offers an excellent chance get critique and comments from other experimenters.

THE MAGNETIC RESONANCE AMPLIFIER (MRA)
Courtesy of Jerry Decker, KeelyNet

By Joel McClain and Norman Wootan: Discovered and proven December 12, 1994 and shared with the world on December 13, 1994.

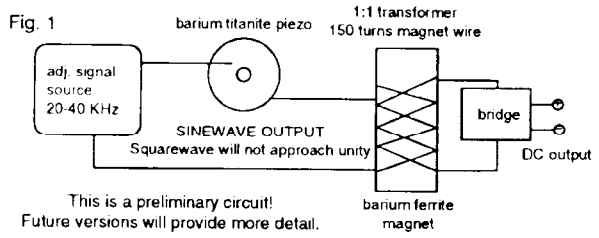
(Please Note: This is a preliminary report that will be followed by updates with more detail. Future versions will include various measurements of the components used in the circuit that is currently running. The circuit is being tested at various levels and attempts at duplication are under way. This information was released over KEELYNET. The authors urge duplication of this experiment, and also wide distribution of this report so that it may not be patented by someone for their own profit or to keep it suppressed. It is a free gift to humanity.)

MRA is the Magnetic Resonance Amplifier. With low level ultrasonic input signals, the MRA produces usable direct current power at levels above unity. This circuit is based upon the work and theories of John Ernst Worrell Keely, and is offered into the public domain in his memory.

Without lengthy discussion about the ether, tetrahedral geometric virtual rotation, mass aggregate resonance, or the rule of nines, it is possible to understand this circuit as basically a tuned magnetic and quartz amplifier.

However, it WAS necessary to study those subjects in order to design and build the MRA. So, if you want to fully realize how it works, avail yourself of the files on KeelyNet which contain all of that and much, much more.

In Fig 1., there is a tunable low power oscillator, which supplies a signal to one side of a barium titanite transducer. The opposite side of the transducer is connected to a primary coil, which is wrapped around a barium ferrite magnet core. The opposite end of the primary goes back to the oscillator.



A secondary is wrapped around the primary, and is connected to an ordinary bridge rectifier, and the output of the bridge is applied to a DC load. A filter capacitor can be used on the output of the bridge, and was used on the MRA which we built. Additionally, a load resistor across the capacitor will keep the output DC from getting too high as the circuit is tuned. We found that a 30 ohm, 10 watt resistor was sufficient.

Once this has been assembled, put a voltmeter across the output resistor to monitor the voltage rise as the circuit is tuned. Adjust the oscillator frequency to provide the highest DC output. **During this process, be aware that the voltages across the piezo and the coil will be VERY MUCH HIGHER than the signal level which you are applying. We have seen combined voltages of almost 1000VAC with only 30VAC of signal input.**

When the circuit is tuned, the magnet will be "singing" at around 8000 to 11000Hz. If the piezo sings, you are exceeding its power capabilities, and will need to reduce the number of turns on your primary. The frequency that resonates both the piezo and the magnet at optimum resonance will be three times (three octaves above) the frequency at which the magnet is singing. This is the nine harmonics that are mentioned in the Rule of Nines.

To test the circuit, place a precision, high wattage, low ohm resistor in series with the output from the oscillator to the

piezo, and measure the voltage drop. It should be very small, less than 0.1VAC. Use this value to determine current in the series circuit, and then calculate power.

Next, measure the DC voltage across your output load resistor, and once again calculate power. You should be between three to four times above the previously calculated input power.

Once the circuit is in operation, you will note that the voltage will vary by 0.1VDC or more, depending upon the time of day. This is due to the nature of etheric forces inherent to the earth's magnetic field. Watch for peak voltage at or before sunrise.

In our circuit, we measured 0.084VAC drop across a two ohm series resistor, for a total of 0.685 W dissipation in the primary. With this, we attained 2.75 W of output power, and used this to drive a lamp and a motor. Increasing the signal voltage had the effect of decreasing the primary current while boosting output power, thus improving the power gain ratio. We believe that larger power systems can be built by using larger coils, more piezos, and a lower frequency, as long as the aggregate combination is within the resonant frequency range of the components.

The MRA is essentially a means of releasing the electrical energy stored in magnets. As such, it is an AC battery with DC output. It can be used for a portable, self-charging power supply with a solid state oscillator and rechargeable battery. For those who want a synopsis of the technology, the following paragraphs are offered, but it is strongly suggested that you follow up this reading with a more thorough study of the KeelyNet files.

Matter = energy. To change the matter, change the energy. Creating a magnet is achieved by a process which causes the matter to be both expanded and compressed at the same time, with the result that a magnet is in a constant state of collapse. This is why magnets attract material with similar lattice structures, as they attempt to fill the energy void which created them. The "domains" of the magnet are fixed after the process of magnetization, and the only way to extract electrical energy is to physically spin a coil relative to a magnet.

However, it is also possible to induce virtual rotation by applying the resonant frequency of the magnet, which causes the lattices and the domains to vibrate. However, the power required to do this is greater than the energy released by the virtual rotation. Therefore, it is necessary to increase the vibration without using excessive current.

The piezo has a virtually inexhaustible supply of free electrons, and it releases them when it is stressed. Using the piezo in series with the primary coil will almost eliminate primary current, because it is voltage which stresses the piezo, not current. Therefore, the piezo can be stressed with very little actual power, and provide the current to the primary coil, which vibrates the domains of the magnet.

The piezo is the catalyst for the circulating current with the primary coil. The circulating current is additive, and this is the reason for the high potentials developed across both the piezo and the primary coil.

It is at this point that resonance becomes important. You MUST have three octaves of separation between the magnet resonant frequency and the signal applied to the piezo. The circulating current is rich in harmonics, and this is necessary for the operation of the circuit.

Although the circuit is simple, it utilizes the concepts of PHI, of virtual rotation, of tetrahedral geometry, piezo and transformer theory, and electrical knowledge. It is not suggested as a beginner project as a result of the high voltages present. For engineers and technicians of experience, it may be difficult to accept that the MRA is above unity. The ramifications are enormous. Hopefully, it will help to build a better world.

NOTE: the crystal transducer was thought to be barium titanate, and there is reason to believe it is, in fact, titanium zirconate. These are disc shaped, about 3" in diameter with a 1" diameter hole in the center. The disc is about 3/8" thick and is coated with silver on both sides. They are advertised in the back of many electronics magazines for about $5 each. We have access to a small stock and might offer them for experiments should people ask for them.

Vangard Note

This device incorporates power multiplication principles using multiple resonances as claimed by Keely and Hendershott. It also corresponds in some ways with Floyd Sweet's VTA and Joe Parr's energy spheres from pyramids.

Joel called Sunday night in an excited state. He and Norman took turns explaining what they had achieved using this circuit. The power input measurements were about 600 mWatts and yet the circuit was generating about 2.5 Watts on the output. Norman hooked up a DC motor and he said it was spinning like crazy in addition to a light bulb glowing brightly.

Norman was laughing and said they'd beat Harold Puthoffs' One Watt Challenge as issued at the 1994 ISNE conference in Denver. This has created quite a bit of excitement and Puthoff now has a FAX'd copy of the circuit. No doubt it will be everywhere in a very short time. The hope of Joel and Norman is that others will duplicate the initial effect and be able to expand on it to derive useful power.

Sweet claimed something on the order of 1:3,000,000 over-unity. The input power to his device was 10 VAC at 29 microamps (290 mWatts). The output had been loaded to as high as 3,000 Watts.

The initial MRA circuit is something on the order of 1:5 and is believed to be scalable. Joel says the coil he had wound around the barium ferrite magnet was not in the least precise and he is of the mind that a huge coil surrounding the magnet will produce a proportional increase in power.

So, here is a wonderful opportunity to build a pioneering device. If you have questions or suggestions, you may direct them to Joel McClain or Norman Wootan at KeelyNet (214-324-3501).

I think they both need to be commended for their willingness to share what many would keep proprietary or die with the secret ...>>> Jerry

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THE NEW ENERGY

The Scandinavian Association of Vacuum Field Energy sponsored the Symposium on "The New Energy, The Practical Use of Vacuum Field Energy" on 3-4 September 1994. The main speaker was Dr. Harold E. Puthoff of the Institute for Advanced Studies in Austin, Texas. The following is a overview of the subjects presented at the symposium.

On Saturday, Dr. H.A. Nieper (President of the German Assn. of Vacuum Field Energy) gave an introduction to the Symposium and Background. Dr. H.E. Puthoff presented two papers, "Zero-Point Energy, an Introduction" and "Extracting Energy and Heat from the Vacuum." Dr. J. Tellefsen (assist. Prof. at the Royal Inst. of Technology in Stockholm) gave "Ideas and Experiment of Victor Schauberger." Dr. H.A. Nieper concluded the first day with a video demonstration and comments.

On Sunday, Dr. A. Alexander (Pres. of the Ukrainian-American Int. Inst. and previously with NASA) presented "Energy Research Situation in the U.S.A. with respect to the May '94 Field Energy Conference in Denver and the Hal Fox papers." Dr. H.S. Nieper presented "Medical Aspects of the Vacuum Field Energy." Dr. L. Florberg (Prof. Techn. Univ., Lund, Sweden) gave a talk and discussion on "The Invisible, Insidious Dangers of Magnetism." Dr. Josef Gruber (Prof. Univ of Hagen, Germany) presented the final paper "Economical Implications of Free Energy for Individual and Society." The symposium was closed with a panel discussion on the "Implications of Free Energy for People and Society."

Nothing great was ever achieved without enthusiasm.

-- Ralph Waldo Emerson

Rotating Space-Energy Machines

NEW ZEALAND / JAPAN CONNECTION
Courtesy of Dr. Harold Aspden

"Japanese Corporation to Join with Whakatane Scientist," *Eastern Bay News*, New Zealand, 22 Dec. 1994, p 2.

A large Japanese Corporation specializing in the manufacture of super high-tech componentry has joined New Zealand scientist Robert Adams in a joint venture to develop the Adams Pulse Switched Reluctance Electric Motor Generator. Adams will direct the joint development beginning in the new year in both Japan and New Zealand.

Development will involve the integration of the "advanced" Adams Motor Generator technology and the Japanese corporation's own advanced technology. [possibly the Takahashi permanent magnets (*NEN*, vol 2, no 8, Dec. 1994, p 12)]

The deal was initiated in October 1994, and finalized mid-December with eight executives, engineers, scientists and the president of the corporation, visiting Adams and conducting laboratory analyses and negotiations for the device's development.

After the Australian magazine *Nexus New Times* ran an international report on the "original version" of the motor generator in 1992, Adams has had many offers, ranging from the "sublime to the ridiculous." But the parties concerned did not meet with Adams' stringent criteria after he investigated them. "It has taken the foresight and ingenuity of the Japanese to recognize its obvious potential and respond accordingly," said Adams.

Due to confidentiality agreements between the parties, no further information is available at this time.

ADAMS-TYPE MOTOR EXPERIMENTS
Courtesy of Dr. Harold Aspden

Dr. Aspden is building several test rigs of different designs, none of which replicates the Adams machine, but all of which should confirm, or otherwise, the energy gain concepts that are inferred by the Adams design.

In one day's tests, Dr. Aspden remarked that it was interesting that, unlike the characteristics of the drive motor alone, he found that a plot of input power, needed to run the motor at different speeds, could exhibit a hysteresis effect if speeds were changed up and down too sharply. Also, having

deliberately designed the machine with a directional bias, he was gratified to find the characteristics different for clockwise as opposed to counterclockwise rotation. Aspden believes that the speed-power hysteresis is no doubt attributable to use of permanent magnets in a device subjected to cyclic activation. He says it was the same in his experiments on a transformer in which he incorporated some magnets. The performance characteristics can be erratic and dependent upon the history of the excitation changes, making it difficult to get reliable measurements, especially concerning those results which indicate a possibly spurious 'over-unity' operation.

Aspden's first test machine has a rotor about 5 times the mass of the rotor in the DC drive motor, and at 1,700 rpm drew power of 5 watts of which more than 3 watts was taken as loss within the drive motor, leaving nearly 2 watts to account for bearing and magnetization 'iron' loss in the test machine. His next tests would decide how much of that latter loss occurs in the rotor as opposed to the stator and analyze its variation with speed and rotation direction.

Aspden says, "This pursuit of building a new kind of motor requires full assessment of where and how all the losses are generated, bearing in mind that we expect the magnets to do the work and the power we supply merely to be consumed as loss in regulating conditions to allow the magnets to function. Robert Adams has been running his machine in an enclosed housing to make calorimetric measurements, but such heat tests are something I shall defer into the future."

Dr. Aspden foresees that he will publish something on the motor project next April, and that there will be much of interest to tell, especially concerning details of motor construction. He mentions Takahashi's machine, and thinks that it will soon be made public by patent disclosures or by a planned publication by the inventor. "I do, of course, believe that a permanent magnet of a cast metal alloy, such as Alnico, holds one of the secrets to free energy. In a sense it is a thermoelectric composition in which heat energy is deployed regeneratively to set up powerful solenoidal currents. If we use magnets of ferrite composition, maybe the heat flow is not so good and maybe Takahashi is getting his results by developing special types of cast alloy magnet. Being conductive metal, they will permit heat and thermoelectric current circulation. Note that my own research with my colleague Scott Strachan concerns a powerful heat to electricity conversion technology using thin layers of aluminum in contact with nickel and that Alnico has a crystalline layered structure including striations of aluminum with nickel and iron," says Aspden.

He ends, "I am sure that all these projects, whether solid-state or motors will come together on common scientific ground under the heading of magneto-thermodynamics. We only need to get the scientific world to listen and gradually creep from under their gravestone, the one which bears the legend: "Certified dead by application of the second law of thermodynamics!"

ASPDEN COMPANY GETS SMART AWARD

"New Electric Motor Inventor Gets DTI Award Boost," news release for 24 Nov. 1994, issued by the Central Office of Information on behalf of the Government Office for the South East (Directorate of Trade and Industry), UK.

The British Department of Trade and Industry (DTI) has given a SMART award (Small Firms Merit Award for Research and Technology) to Thermodynamics Ltd., the company of Dr. Harold Aspden and Michael Love. The £43,000 award from the SMART will go into research for an alternative electric motor.

"Without the money we could not go ahead with this research," said inventor Dr. Aspden, a Fellow of the Institution of Electrical Engineers and formerly, until his retirement, IBM's Director of European Patent Operations. Co-Director Michael Love received the award from Technology Minister Ian Taylor at a ceremony in London on 24 November. Mr. Love commented, "The SMART award gives the opportunity to test a very challenging electric motor concept that departs from what is conventional. Its operating principle may seem complicated, but the machine is easier to build, should prove more efficient and run cooler than established motors. However, we are in a very embryonic stage and have not yet assembled a working prototype."

Should this research prove successful, the alternative motor could be the efficient power drive in the future domestic and industrial appliances. Industry is particularly looking for better motors that would use energy more effectively. Dr. Aspden and his co-director, Michael Love, set up Thermodynamics Ltd. expressly to explore and develop what this new motor could contribute to future technology.

Electricity

UP AND COMING FUEL CELLS

Courtesy of Don Kelly

Harry M. DeBell (staff), "Clean Power Fuel Cell," "Energy for our Future" column, *Extraordinary Science*, Jul/Aug/Sep 1994, p 28.

SUMMARY

Utility companies are finally realizing they face competition not just from each other, but from the new wave of free energy devices that may be owned by the customers themselves. Fuel cells, electrochemical devices that produce electricity as long as they have fuel and air, are clean, quiet,

and efficient. They take advantage of portability, modular construction, and minimum dependency on transmission distribution systems.

In Japan, the Tokyo Electric Power Company at its GOI power station, utilizes an eleven megawatt fuel cell, the largest phosphoric acid fuel cell in operation. EPRI, in the U.S., working with the Fuel Commercialization Group (a consortium of 40 utilities), has produced the first demonstration of an industrial carbonate fuel cell power plant which produces two megawatts of electrical power.

Efficient utilization of alternate fuels to continuously produce electrical power at the needed location is the main advantage of fuel cell technology. Alternate energy windmills and solar cells have problems of not producing continuously and usually not being at the load site. Fuel cells offer a cost effective solution. They can be incrementally added to increase power output as the load needs increase, without the large capital investments of projecting future power needs and meeting them well in advance with centralized power plant construction.

Large generating power plants will be pushed out of the market by small on-site electrical power producers such as fuel cells. Investor owned utilities will look to the most cost and power efficient ways of filling their power needs quickly and flexibly.

Summary by D. Torres

EDITOR'S COMMENTS

Fuel cells must have fuel to operate. The best fuel (for most fuel cells) is hydrogen gas. Natural gas can be used but some types of fuel cells become contaminated and have to be cleaned or replaced. However, a wind-powered generator can be used to produce hydrogen for later use in a fuel cell. Hopefully, better new energy technologies will soon be available.

WAVES TO WATTS

"A Jolt of Electric Juice from Choppy Seas," *Business Week*, 28 Nov. 1994, p 149.

SUMMARY

Ocean Power Technologies Inc. of Princeton, NJ, is developing a new, pollution-free system that will convert the energy of ocean waves into useable electricity by utilizing piezoelectric plastic. The plastic, which is now used commercially in microsensors, generates electricity when it is physically strained. Plans by Ocean Power include laminating many sheets of the plastic together, and hanging them from rafts in the ocean. The plastic sheets will be anchored to the ocean floor, and will stretch when the raft is lifted by the waves. The strain causes electricity in the plastic, which is carried by the attached electrodes, and changed into direct current by custom made converters.

Other wave-power generation schemes have generally involved turbine generators that are easily fouled or corroded. AMP Inc., of Harrisburg, PA, is supplying the piezoelectric film, in trade for a stake in the profits. Ocean Power is planning to make 1 to 100 kW systems for desalinization plants, offshore oil rigs, and small coastal towns by the end of 1996. Licensees are sought by the company to manufacture multimegawatt systems for utilities use.

Miscellaneous

A PROGRESS REPORT ON LOW ENERGY TRANSMUTATION

By Gary L. Kissler (Research Program Director for Joint Research Group, Inc., 6003 Makely Drive, Fairfax Station, VA, 22039).

Here is a good news/bad news combination which should be no surprise to anyone following the progress of cold fusion research. The good news: It is possible to transmute stable elements using simple procedures at low temperatures. The bad news: It is not easy to produce high yields and we often have great difficulty in achieving repeatability.

As early as June of 1991, we had a transmutation experiment which had a yield of ten per cent, but it produced silicon, a very plentiful and cheap, element, so it was not a likely candidate for commercial transmutation. Since then we have been able to transmute cheap, readily available elements such as iron, copper and aluminum into measureable amounts of cobalt, copper, gold, tritium, palladium, platinum, rhodium, ruthenium, silver, tungsten and zinc. With the exception of silicon, copper, zinc and tungsten, the yields have all been below one percent. Some of the experiments are quite repeatable while others are successful only one time in thirty or less.

Our definition of transmutation is purely functional. If a certain element is not present in significant amounts in the materials before the experiment, we say that transmutation has occurred. Independent laboratories are used to verify our findings, for example, Ledoux and Company of Teaneck, New Jersey, analyzed our precious metal transmutations, and Teledyne Advanced materials of Huntsville, Alabama, confirmed our tungsten transmutation. These laboratories are working "blind" in that they are not informed that the materials are the result of transmutation experiments.

Here are some of the general patterns which seem to be emerging from our research program:

1) It is possible to transmute some stable elements using simple methods at low temperatures without producing measurable amounts of what is generally known as "radiation."

2) The majority of our transmutation experiments do not produce significant amounts of excess heat. We do not investigate any of those which do seem to be energy producing, since the goal of our investigation is commercial transmutation, not energy production.

3) The transmutations seem to occur in sequences where several intermediate elements are produced and then transmute again into the final products. This transitional period is over very quickly and makes it difficult to understand the exact mechanisms of the transmutation process. Chemical compounds are common in the final results, for example, gold frequently forms as a gold chloride, indicating that both gold and chlorine have been produced.

4) We have been unable to determine why one experiment will succeed while a seemingly identical experiment will fail. The evidence seems to point at the appearance of the large number of the transitional intermediate products. We may know what elements are initially present in the experiment, but a short time later other elements appear, changing the composition of the experiment.

5) There seems to exist several "paths" possible to produce a given element. We have transmuted copper from a number of base elements.

6) Quite often the results of our transmutation experiments are not in agreement with what is predicted by the Atomic Theory.

The last pattern seems to be the most important. I would urge anyone who is interested in cold fusion or transmutation to be tolerant of new theories and ideas. We are in the very early stages of study in these fields, and it is a mistake to assume that our current theoretical ideas about the nature of matter as represented by the Atomic Theory will be the same as our ultimate theoretical understanding.

THE UBIQUITOUS SOLITON
Courtesy of Samuel P. Faile
from *Fusion Facts*, Dec. 1994.

David C. Freedman, "Lone Wave," *Discover*, vol 15, no 12, Dec. 1994, pp 62-68.

EDITOR'S SUMMARY & COMMENT

About 1835 a young engineer, John Scott Russell, watched a heavy barge being towed by horses down the Union Canal near Edinburgh, Scotland. As he watched, the tow rope broke and the barge settled down into the canal. The result was the creation of a big hump of water that began traveling down the canal. Such water waves are expected to disperse or breakup and die away into ripples. This wave was different. Russell jumped on his horse and with amazement followed the wave down the uniformly-shaped canal for a distance of two miles while the hump of the wave traveled serenely on with little sign of diminishing. Russell knew he had witnessed something unusual. He soon figured out how to create such solitary waves and tried to convince others that this type of wave was different. With the same ardor that cold fusion has been accepted, the Royal Astronomer Geoge Biddle insisted that the hump of a wave was only the top half of an ordinary wave. Lord Stokes produced a mathematical proof that the wave was as impossible then as tapping vacuum energy is today.

Waves disperse because of the combined effects of dispersion and compression. It was not until 1895 (about 60 years after Russell's discovery) that two Dutch mathematicians (Diederick Johannes Korteweg and Hendrik de Vries) showed that an unlikely proper balance between dispersion and compression could, indeed, create and/or sustain a single hump of a water wave. In 1965 two U.S. scientists (Martin Kruskal of Princeton and Norman Zabusky of Bell Labs) decided that these "solitary waves," which they dubbed "solitons," would be found in many places: electro-magnetic fields, water, air, and other yet-to-be-discovered places.

In the article titled "Lone Wave" by David H. Freedman in *Discover* magazine for December, 1994, the author treats the soliton in detail. The article tells about solitons being found in cellular proteins; are the probable source of energizing muscle tissue to make it contract; perhaps the source of the unzipping of long DNA chains; maybe among quarks in a high-energy space bubble; and possibly in large soliton stars.

Now solitons are suggested as being formed during earthquakes, in weather patterns, and even in Jupiter's atmosphere as the famous "red spot." Solitons have been formed in magnetic fields and have been produced with lasers so that the soliton forms at some distance from the laser. Scientists are even suggesting that it is solitons that are characteristic of both wave and particle and may be the unit that explains some of the observed phenomena of quantum mechanics. The article concludes with the following:

"Solitons look a lot like what a few people have always thought a particle should look like in quantum mechanics," says Alan Newell. Even if solions don't give physics a Theory of Everything, their ubiquity and influence suggest that there are hidden connections between different realms of nature. "This shows that no area of science stands alone," say Newell. "The soliton cuts across all of them."

Now let's jump onto the ideas presented in Freedman's article and question where solitons might fit in cold fusion or in space energy. Would it be appropriate to

consider that the Lorentz-type electromagnetic field that fills all space consists, to a large extent, of solitons? Are solitons the type of waves that can accelerate particles until they become so energetic they show up as bursts of cosmic radiation? Is the high-density charge cluster of Ken Shoulders experimental work a type of soliton and is that why such a cluster can continually give off and extract energy from the vacuum field of energy? Is it the creation of solitons that allows for the penetration of the Coulomb barrier and results in changes to the nuclei of atoms (thereby transmuting one element into another element, one step up the periodic table)? Do mosses and fungi create solitons to create elements that were not present in the experimental nutrient solution? Is the phenomenon of sonoluminescence due to the creation of solitons? Do solitons play a role in the subtle energies in nature? Can we use a soliton generator to stabilize radioactive materials? **Readers: Any further ideas?**

GEOTHERMAL PROGRESS

David Tenenbaum, "Tapping the Fire Down Below," *Technology Review*, vol 98, no 1, pp 38-47.

ABSTRACT

After a 20 year effort, in 1992 and 1993, a Los Alamos National Labs team has finally extracted heat from 453° dry rocks that lay 12,000 feet below the Jemez mountains. Researchers had pumped up to 100 gallons of water per minute through artificial cracks in those rocks for seven and a half months, and the water returned to the surface at 350°F, carrying enough energy to produce a steady 4 megawatts of heat. This was the "world's first practical demonstration," said project leader David Duchane of the new technology known as hot dry rock (HDR).

While HDR could possibly boost the prospects of geothermal energy as an alternate energy source, the fact remains that it is a time and capital-intensive choice, with as little flexibility as coal-fired power generation plants, although quite pollution free in contrast. Many of the eighteen countries utilizing geothermal energy are in the "Ring of Fire" Pacific area, where collisions of geological plates cause the earth's heat to rise near the surface. Developments in both retrieving the deep heat and drilling procedures to get to it are making it easier and cheaper to use geothermal areas to access the heat power.

PHASE OUT FOSSIL FUEL

Courtesy of Don Kelly

Dr. Wingate Lambertson, "Phase Out of the Fossil Fuel Industries," *Explore More!*, no 8, 1994, pp 12-13.

AUTHOR'S INTRODUCTION

In 1993 John L. Peterson of the Arlington Institute announced in an obscure report "The Road to 2012: Looking Toward the Next Two Decades for the U.S. Coast Guard," that in 20 years fossil fuel-based energy conversion devices will become obsolete. They will be replaced by zero-point energy (ZPE) conversion devices that will "take energy out of the 'air' with no negative byproducts at all.... This may lead to turbulent national social psychologies."

"On one hand, great hope would attend this new way of solving huge global problems. A new era would loom on the horizon. On the other hand, shifting to the new mode would not be easy for those who cannot change easily and quickly. This would produce great despair for many."

The purpose of this paper is a call for planning -- hopefully on an international level; at the very least on a state level within the United States -- on how this radical change is to be managed with the least trauma to the greatest number of people. It is the opinion of this writer [Lambertson] that the electric generating market for the coal industry will be obsolete in 10 years, leaving metallurgical grade coal as its only significant market. The basis for this opinion is described [in the article]. Use of petroleum products, such as gasoline and diesel fuel, for combustion will phase out more gradually over the following decade.

It would be unconscionable to permit these two fields of commerce, which have been so important in the building of the industrial world, to fade into oblivion without developing some order to their demise. Now is the time to bring the problem out into the open for discussion and action by industrial and governmental leaders.

CLEAN SUPERCARS

"Cleaner Than Clean," *Rocky Mountain Inst. Newsletter*, vol 10, no 3, pp 6.

SUMMARY

When the Rocky Mountain Institute refigured the impact to the air quality made by battery-electric powered ZEV (zero emission vehicles), as compared to the upcoming "supercars" (ultralight, hybrid fuel/electric vehicles) capable of hundreds of miles per gallon, they found that electric cars may not be the most pollution-free solution. Battery electric cars add to the pollution through using power from local power plants, which are not zero-emission at all. The California regulations that call for production of ZEV's **didn't** take this into consideration. But in public hearings in March and July, the California Air Resources Board (CARB) has indicated a need to rewrite its regulations to allow any vehicle that runs as (comparatively) clean as a ZEV to qualify as one -- a "virtual" ZEV.

In September, the Environmental Protection Agency tentatively ruled that individual states can decide whether to require ZEVs as California did. This would get rid of the two sets of regulations: one for California and one the rest of the nation. Then in October, the EPA wasn't sure about the decision. If the "virtual" ZEV idea is copied by the Eastern states also, they will reap even more benefits, because they have dirtier power plants.

SUPERCARS: Rocky Mountain Institute's (RMI) Supercar concept is already gaining interest from around the world.

A prototype ultralight-hybrid car, Viking 21, was designed by a Western Washington University team, and registered 202 mpg-equivalent in an April test run in Los Angeles traffic. The Viking 23, its successor which weighs about a third less, is expected to do even better.

RMI is now working with about 20 industrial partners, including some automakers, to brainstorm technical ideas and encourage competition, with the goal of speedy commercialization. Advances have already been achieved in ultralight materials, manufacturing, aerodynamics, automotive super-windows, electronics, motors and storage devices.

Mercedes, Volvo, Daihatsu and Mitsubishi, among other automakers, have shown prototypes of ultralight and hybrid cars. (But none have shown a car combining both design concepts.)

Amory Lovins, who received the Nissan Prize for RMI's paper on supercars last year, has been lecturing on the subject to audiences ranging from senior White House staffers, to auto-industry executives, to the American Assoc. for the Advancement of Science.

There is a feature article coming out in *The Atlantic* magazine (tentatively January '95) on RMI's supercar. All this interest is bound to turn up some good technical advancements. The profit motive is as valid a goal as clean air, and usually more effective.

Summary by D. Torres

NEW ELECTRICITY ORDER?

"Wheeling and Dealing," *Rocky Mountain Inst. Newsletter*, vol 10, no 3, p 8.

In April, the California Public Utilities Commission (CPUC) announced its plans to abandon most of the past century's regulatory practices in favor of "retail wheeling," a so-called simple market approach that would hypothetically encourage competition, cut rates and increase efficiency by an order in which customers could choose to buy electricity from any supplier. Many people, and the number is growing, doubt the ability of retail wheeling to achieve these aims, and believe that there are better ways of doing it.

Up to now, California's utility regulators have been among the best and most progressive, encouraging cost-effective energy efficiency that, in 1990-93 alone, saved Californians almost $2 billion. Utilities were rewarded for cutting customers' bills, not for selling more electricity. Retail wheeling would kill all these incentives in favor of a commodity system that does not favor the average consumer at all. The change purportedly aims at encouraging the retirement of uneconomical older power plants, but this appears to conceal a hidden agenda taxpayers would never accept. Its main supporters are a handful of large energy users who will benefit greatly by grabbing up the cheapest power for themselves, and leaving everyone else to pay off the costly old plants' debts.

RMI is hoping that this problem will bring a rededication to rewarding utilities for cutting bills, instead of selling more electricity, and will prove that the cost cutting measures that benefit the consumer

will achieve more satisfying results than the inequities of retail wheeling.

SINGLE WIRE POWER TRANSMISSION

By Dr. Igor Goryachev

A note about the results of A. Frolov's experiments with a single-wire electric power transmission and trapping zero point energy. (see *NEN*, Dec. 1994, p 13.)

In his experimental layout, Mr. A. Frolov used a generator with frequency in the range 10-100 Khz as an external power supply connected to the primary coil of an electromagnetic transformer to increase the output voltage from 30 V up to 2-5 kV. Just one outlet of the secondary transformer coil was connected to a closed circuit containing two consecutive diodes (referred to by the author as "Avramenko's Plug") with a milliampmeter in it.

By detecting a current in this closed circuit, the author speculates that he observed a single-wire electric power transmission and even generation of free energy in this circuit, because of one of the secondary transformer outlets not being connected to an outer circuit.

A possible explanation for the closed diode circuit ("Avramenko's Plug") is that it could operate as a low efficiency antenna and receiver of the electromagnetic energy radiated by the transformer (especially regarding high frequency harmonics of the oscillations). In order to verify this suspicion, the experimenter should completely disconnect the "Avramenko's Plug" from the secondary coil of the transformer just to check whether the electromagnetic energy from the transformer can be transmitted to the closed circuit "wirelessly." One more way of providing a blank experiment is to place the "Avramenko's Plug" into an electromagnetic screen ("Faraday Cage") to exclude the likely influence of the high frequency electromagnetic field.

PUTTING THE OCEAN TO WORK

Edwin Newman (independent researcher), "Force-of-Gravity Conversion Systems," unpublished paper, 6 refs, 6 figs.

ABSTRACT

This paper investigates a new source of electric power. The new system comprises a support tower resting on the ocean bottom and piercing the surface. On it is mounted a large, finned cylindrically shaped bag filled with compressed sea water and some air pockets. The bag floats underwater at a predetermined depth and moves up and down the tower, as well as rotating about the tower due to impinging underwater wave velocities. Attached to the tower frame and running for more than the distance of the bag's projected vertical movements are located rigid, vertical rails. These rails support and interact with gears in the generator pods as the bag moves up and down, providing motive power to the electric generators.

In addition, horizontal racks, located on the inside cylindrical wall of the bag, interact with gears in the generator pods, providing motive power as the bag rotates. A large number of generator pods are provided, depending on the size of the bag. These generators each provide AC electric power which is then rectified to DC power in the pod, chopped, and combined on power buses for transmission by cables to a three phase inverter located at the top of the tower. The inverter produces three phase 60 Hz power for transmission to the coast. If the bag is 65 meter diameter and is 65 meters deep in 133 meters of water, with a vertical core hole of 19.8 meters diameter then the amount of seawater to fill this volume is 195,576,870 kg., plus a minimal amount for compression to stiffen the walls. Regarding the horizontal circular motion of the bag, the moment of inertia is 112,673,478,983 kg. meters and the angular momentum, assuming an impinging velocity of 5 cm./sec., is 173 megawatts.

Examples of the system's performance in a channel and river are also given.

SOCIETY FOR SCIENTIFIC EXPLORATION

The *Journal of Scientific Exploration* is a quarterly publication of the Society for Scientific Exploration, ERL 306, Stanford University, Stanford, CA, 94305-4055, USA. The *Journal of Scientific Exploration* is a source of information, discussion and commentary on topics covering the entire spectrum of anomalous phenomena in an unbiased and rational manner. The goal of *JSE* is neither to advocate the reality of anomalous phenomena, not to debunk. Rather *JSE* is a forum for research and debate by scholars. It is a peer-reviewed

scientific journal with articles typically written by established researchers in mainstream fields such as astronomy, physics, chemistry, biology, psychology, sociology, medicine, etc. It has offered topics ranging from anomalies in mainstream science to parapsychology, UFO's and other phenomena at the borders of science with first-hand, understandably written information. The goal of the journal is to make available professional high quality reports, reviews and commentary for use by researchers, teachers, students and the general public.

LETTERS

LETTER FROM DARRYL EDWARDS

Mr. Fox,

Enclosed is an article that may be of interest to you, ie: *Science News,* October 15, 1994, p 247, "Making Light of Sound in Solitary Bubbles" [see *NEN*, Dec. 1994, p 8].

In coming across this article, I was reminded of the article in *NEN*, "Space Energy Collapses Bubble," (vol 1, no 10, Feb. 94, p 8) by Dr. Hal Puthoff. The authors of the recent research mentioned in *Science News* (Barber, Hiller, Putterman) are the same as named in Julian Schwinger's paper, "Casimir Light, the Source." The authors appear to have a (long term?) involvement in bubble-sonoluminescence research. Interestingly their earlier research is called out as supported by the D.O.E. Division of Advanced Research Projects.

If you are not aware, a common everyday source of rapid bubble generation and collapse (supersonically) are any of several low cost, commercially available "Bubble Jet" computer printers (desk top).For example:
Xerox 4004
Epson Stylus
HP Deskjet
Cannon BJ, etc.

Several different bubble generation methods are used. Thermal pulse, acoustic piezo-electric pulse...etc. They come under the headings of "Bubble Jet," "Thermal Ink Jet" or similar. Extensive amounts of research have been done on these topics by industry research labs. Various fixtures and experiments have been run utilizing the print head devices in different stages of dissection and custom configurations. An innovative person could readily do this at home.

Schwinger states that the light output is inversely proportional to temperature. The utility of the "Thermal Ink Jet" is in question as it relies on generating a rapid bubble by superheating the fluid to high pressure

$$(T > 350°F,\ P \geq 50\ atm)$$
$$(\mu s)$$

with a pulsed resistive element.

Power densities $\geq 30{,}000\ w/cm^3$ are typical. Maybe this could be conducive to novel phenomenon? Yes, interesting and unusual chemical effects do occur.

If you are interested, I could send you a copy of an introductory overview paper on thermal ink jet (many references, college term paper). Good Literature Sources:

a) Proc. Conf. on Non-Impact Printing Tech., by S.P.S.E./SPIE
b) HP Journal
c) IBM Journal (research)

On the subject of biological transmutation I suggest Biological Transmutations by C.L. Kervran, Beekman Publishers, 1980, Woodstock, NY. Very interesting reading, research & refs. This is a reprint of original French work (4 Vol.'s) 1952-1955 (printed in Japanese in '62 and '63). From 1935 to 1955 he did work which led to four years of research on natural biological transmutations; soil, plant, animals, etc. It's all been done before, but few believe it

Check out - Continuous Creation by Branfield, London 1950, about the Soil Association experimental farm.

Kervran extracts: "Chick Contains 4x More Lime Than the Egg!" observation made by Prout in 1822. Mg and K balances in soil don't add up, seeds vs. sprouts, etc.

I enjoy reading *NEN*, Best regards,

Darryl Edwards A.S.M.E.

P.S. Omni opened up a Compuserve account of idea/info exchange "Open Book" or similar (for people into monitoring UFO phenomenon) including an ear to the ground on experimental or novel propulsion/ aero-space info.

LETTER FROM DR. GARY L. JOHNSON
(President, Johnson Energy Corporation, 1630 Osage St. Manhattan, KS 66502),

Technical Writing Skills

I have recently received several phone calls asking about the Water Fuel Cell of Stan Meyer, after he mentioned me in his Water Fuel Cell International News Release of May, 1994. One caller supplied me with the News Release, a copy of the WFC Technical Brief, "The Birth of New Technology," and a video tape based on Stan's presentation at an Extraordinary Science Conference in Colorado Springs. I had heard Stan speak at the International Symposium on New Energy, April 16-18, 1993, in Denver, but have had no other contact.

My own background consists of 28 years as a Professor of Electrical Engineering at Kansas State University. I specialized in wind power, teaching a course and writing a textbook on the subject. I took early retirement Spring 1994 to work as a Wind Power Plant Developer, and also to have more time to search for a new energy source. I have done a good deal of reading over the past 12 years in many areas at the fringe of established science, hoping to find the clues necessary to make a contribution to the subject. The quality of the writing I encountered varied from very good to very bad, so I think I have enough experience to comment on the writing ability of the author of the water fuel cell papers.

Engineering has its own language, with its own special rules. Those who wish to communicate technical concepts must learn this language, or they will be unable to make others understand what they are doing. Patents are written in yet another language, although they should be understood by those who speak the technical language. This author does not speak "Engineering" so I cannot understand what he is doing, at least at the detail level. I do not have any facts to indicate that Meyer's work is flawed. In fact, I hope all of his claims are valid. It is just that until someone goes into his lab and translates his work into Engineering, I and other technically trained people are unable to evaluate it.

By way of illustration, the reference to me in the May 1994 News Release states: "Independent labs around the world have been testing parts of the technology. Some of those tests include: ... Kansas State University report #929469 by Gary L. Johnson, January 1992, 'Electrically-induced Explosion in Water,' which confirmed the Water Fuel Cell mode of operability of the process of instantly converting water into thermal explosive energy on demand, specified under the U.S. National Security Energy Act." One rule of the technical language that was broken here is that he gave an incomplete reference. This was a paper presented at the 27th Intersociety Energy Conversion Engineering Conference (IECEC), San Diego, CA, Vol. 4, pp. 335-338, Aug. 3-7, 1992. The number (#929469) was stamped on the paper by the conference organizers for internal identification purposes, and would not be a part of a complete reference.

The writer stated that it was a Kansas State University report, which is incorrect. University reports typically have no more status than conference papers. Rarely would anyone read a report and confer some sort of official blessing on it. But even recognizing this lack of status, the technical writer needs to get the reference right.

The leading sentence (about independent labs) would be understood by many people to mean that Stan had asked these labs to validate his claims, or that the labs had seen Stan's work and decided to do some related experiments. This would be an incorrect interpretation in my case since I had not heard of Stan Meyer until 1993. I was trying to replicate some work done by Peter Graneau, whose name was mentioned in the next paragraph in the News Release.

The writer said that my paper "confirmed the Water Fuel Cell mode of operability ...". I certainly would not use the word "confirmed" in this context. As I understand it, Stan is using a high voltage, low power, resonant system to separate water into hydrogen and oxygen, at substantially lower energy requirements than the classical low voltage, high current, electrolysis process. The hydrogen and oxygen are then burned to provide energy for his internal combustion engine. He bleeds some of the exhaust stream, which would be steam in a closed system, back into the cylinder to slow down the burn rate and keep the engine from knocking. Graneau and I were using pulse capacitors to apply a high voltage, high current, non-resonant impulse to a small quantity of liquid water, and observed an explosion when the voltage and current levels were above some threshold. Neither of us think that it was thermal expansion of water heated to form steam. Beyond that, I am not sure what causes the explosion. Graneau advocates Amperian Forces, which may well be the proper explanation. I am open

to other explanations, including Meyer's. But the only thing I "confirmed" was that water will explode when a high voltage is applied.

The writer used the phrase 'thermal explosive energy.' The word 'thermal' seems out of place since both Graneau and I stated that we did not think it was a thermal process. I wonder if he meant thermonuclear, which is a totally different concept.

The last phrase 'specified under the U.S. National Security Energy Act' would be forbidden under proper usage of Engineering Language, since it is irrelevant and confusing in this context. Apparently this Act has a statement in it about the desired characteristics of future fuel cells. Such a statement might be used in a proposal for funding to some federal agency, to indicate that the proposal is consistent with national policy. A statement like this might inspire us to pursue a specific line of research, but we would never mention the Act when discussing technology and references.

The writer starts page 1-2 with the sentence "The Inductance (C) and Capacitance (ER) properties of the LC circuit..". Electrical Engineers always use L for inductance and C for capacitance. If forced to use other symbols, they would never use C for inductance (or L for capacitance).

The third paragraph on page 1-2 starts "The impedance of an inductor and a capacitor in series, Z series is given by Z series = (Xc - X1). He appeared to be using a word processor which had subscripting capability, so he should have used subscripts to improve communication. A great deal of technical documentation has been produced on printers without subscript capability, however, so this is not a major problem. The real error is the lack of a j (the square root of -1) on the right side of the equal sign. Impedance is a complex number, having both real and imaginary components. Reactance (Xc or X1) is always a real number. For an ideal LC circuit, impedance is imaginary. Among other things, that says that no real power is being absorbed by the LC circuit (no components are getting hot), even though voltages and currents are present. This is a major concept, one that is drilled into EE students starting in the first course. Some students take a while to understand it, and usually have trouble passing courses until they get it figured out. Omission of the j is a major error, making the following material suspect.

On page 1-4, he states "total circuit resistance is given by Z = RI + Z2 + Z3 + RE where RE is the dielectric constant of natural water." The kindest thing that I can say about this is that it is nonsense. Dielectric constant is a totally different quantity from resistance. The units are different. They cannot be added in any meaningful way. I am guessing that he wanted to say that RE was the effective resistance of a quantity of water between two electrodes.

Then on page 1-5, he presents the formula for potential around an isolated point charge, a well known formula, but gets it completely wrong. I could continue but it should be apparent that this author cannot write a technical document.

Stan also needs to think about the Biblical instruction to "Submit to one another." Stan and I both name Jesus as our Lord and Savior, so this is not condemnation from an unbeliever. Writing in the Engineering Language is, in a sense, an act of submission. We write things in certain ways, using established rules, because others have decided that such rules help us to communicate technical information. When we do not submit to such rules, confusion results.

Again, I wish Stan well, and hope to see some properly written documentation on his technology in the near future.

LETTER FROM HERBERT LEE

Just a note on the article by N.A. Reiter in the Nov. 1994 *NEN*. Has he tried 5, 7, 9, or more transistors? And did he physically lay out the circuit in a ring as shown? The way the components are laid out might be important.

Herbert Lee, Honolulu, HI

LETTER FROM STEFAN MARINOV

Courtesy of Don Kelly

Today I read in the *NEN* your information on the over-unity machine of Y. Takahashi. I would like to know as much as possible on this machine. How much was the current consumed from the four 12 V batteries? You write: "The batteries were almost dead, but Takeo Sawai drove it down the freeway at 70 mph. When he arrived at the destination, the batteries were fully charged." This sentence says that Takeo Sawai has charged the batteries when driving the car. Why you

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CONTENTS FOR JANUARY 1995

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