# REVOLUTIONARY NEW U.S. PATENTED HOT HYDROGEN FUSION POWER REACTOR

Dr. James R. DeLuze; D.O.; Osteopathic Physician, Surgeon, Artist, and Inventor

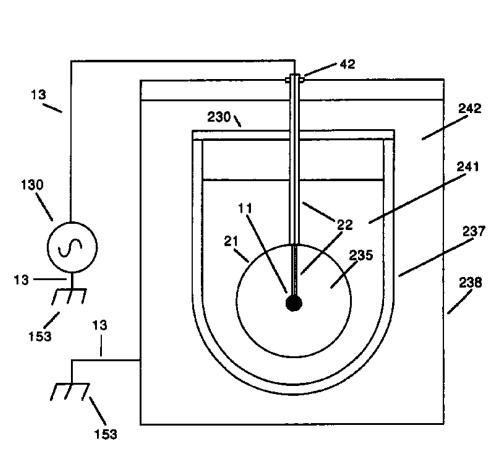
# PATENT AND OPERATION

### U.S. Patent

David Braaten, 'Ridiculously' easy test yields claim of energy triump, The Washington Times, p. A5, Mar. 1989.\* ists, The New York Times, p. A1 and A22, May 1989.\* Kreysa et al. A critical analysis of electrochemical nuclear fusion experiments, Journal of Electroanalytical Chemistry, vol. 266, p. Ohashi et al, Decoding of Thermal Data in Fleishmann & Pons Pape Journal of Nuclear Sciencec and Technology, vol. 26, No. 7, p. (21) Appl. No.: **10/214,372** 

(22) Filed: **Aug. 6, 2002 ABSTRACT** Prior Publication Data A generally spherical sealed reactor vessel defining a volume US 2011/0268236 A1 Nov. 3, 2011 target sphere shaped electrode 11 is centered within nonconductive reactor vessel 21. The target sphere is insulated from and fixedly centered within the nonconductive Related U.S. Application Data reactor vessel by an insulated stalk 22. This vessel is sus-(60) Provisional application No. 60/311,453, filed on Au pended in an insulating and cooling medium 241 composed of transformer oil. Deuterium gas 235 is released into and source of high voltage, high frequency potential 130 is con nected to the target electrode by an electrical connection 1.

field within the reaction chamber. This an oscillating electric See application file for complete search history. field is formed within the enclosed space of nonconductive reactor vessel 21, extending between target electrode 11 and heat absorbent container 238. This electric field is of suffi cient intensity to provide for the ionization of gases contained therein. It also provides for the alternately radial outward contained ionized gases. The collapsing of ionized gases field is sufficient that such impacts occur at fusion reactive



OTHER PUBLICATIONS MisKelly et al, Analysis of the Published Calorimetric Evidence for Electrochemical Fusion of Deuterium in Palladium, Science, vol 246, No. 4931, p. 793-796, Nov. 1989.\* Lewis et al, Searches for low-temperature nuclear fusion of deute-George Chapline, Cold Confusion, UCRI-101583, p. 1-9, Jul. 1989.\* Faller et al. Investigation of Cold Fusion in Heavy Water. Journal of Radioanalytical Nuclear Chemistry, Letters, vol. 137, No. 1, p. 9-16, can, Feb. 1995.\* cations, vol. 72, No. 4, p. 309-313, 1989.\* Physical Review Letters, vol. 62, No. 25, p. 2929-2932, Jun. 1989.\* ments, The Washington Post, p. A1 and A7, May 1, 1989.\* Associated Press, Panel Opposes Cold Fusion Efforts, The Washington Post, p. A14, Mar. 1990.\* Theory Section, Solid State Division, ORNL/FTR-3341, p. 2-15, Schrieder et al, Search for cold nuclear fusion in palladiumdeuteride, Zeitschrift für Physik B-Condensed Matter, vol. 76, No. 2,

Deuterated Ti and Pd Foils, Physical Review Letters, vol. 63, No. 18,

p. 1926-1929, Oct. 1989.\*

Figure 3

8, 2001.

Cribier et al. Conventional Sources of Fast Neutrons in "Cold Fusion" Experiments, Physics Letters B, vol. 228, No. 1, p. 163-166, Shani et al, Evidence for a Background Neutron Enhanced Fusion in Deuterium Absorbed Palladium, Solid State Communications, vol. Associated Press, Physicist: Utah Cold-Fusion Gear Doesnt't Work Salamon et al, Limits on the emission of neutrons, gamma rays.

Moss et al., "Hydrodynamic Situations of Bubble Collapse and Picosecond Sonoluminescence", Phys. Fluids, vol. 6, No. 9, Sep. 1994.\* Browne, The New York Times, Dec. 1994.\* "Star in a Jar", Popular Science, Dec. 1998.\* Fusion", Fifth International Symposium on Cavitation, Osaka, Japan, I. Sample, "Science runs into trouble with bubbles", "The Guardian".

Akiro Takahashi, Osaka University (htttp://wwwcf.elc. iwate--u The Chemistry and Industry News, Apr. 21, 1997.\* "Chemistry casts double on bubble fusion", Nuclear News, Sep. Kaiser, "Inferno in a Bubble Turning sound into light poses a tanta-

Figure 5

Gordon Pusch (http://www/physics-talk.com/Why-is-acetone-used-

### HOW IT WORKS

#### A. INTRODUCTION.

A spherical reactor vessel filled with rarefied deuterium gas contains a central titanium target. A high voltage AC potential is applied between this target and the external ground plane. The intervening material comprises thermal and electrical insulation. See Figure in abstract at left, and figure 2 at lower right.

The applied AC potential creates an oscillating electrical field within the reactor. The process sequences through steps. Neutral gas. Ionization. Inward positive ion acceleration with concomitant outward electron acceleration. Inward acceleration of positive ions to target at fusion reactive velocities. Disassembly of the reacting mass. Recombination of electrons and positive ions to neutral gas. Extraction of waste gas and injection of fuel gas. Continuous repetition of this sequence.

B. NEUTRAL GAS See Figure 3.

Tigure 6

#### c. IONIZATION

The gas is ionized with initial differential acceleration of charged particles. Positive charged particles are radially accelerated inward towards the target with electrons accelerated outwards. A net current still flows through the capacitor comprised of positive and negative charge carriers. See Figure 5.

#### D. INWARD POSITIVE ION ACCELERATION WITH CONCOMITANT OUTWARD ELECTRON ACCELERATION

Increasing potential continues acceleration of charged particles. Negative, low mass electrons start collecting at the inner surface of the reactor envelope defining a region of potential intermediate between the ground plane and the target. This forms the two innermost plates of an AC capacitive voltage divider. Current through the capacitor is decreasing as electrons accumulated along the inner surface of the reactor envelope. See

#### . INWARD ACCELERATION OF POSITIVE IONS TO TARGET AT FUSION REACTIVE VELOCITIES.

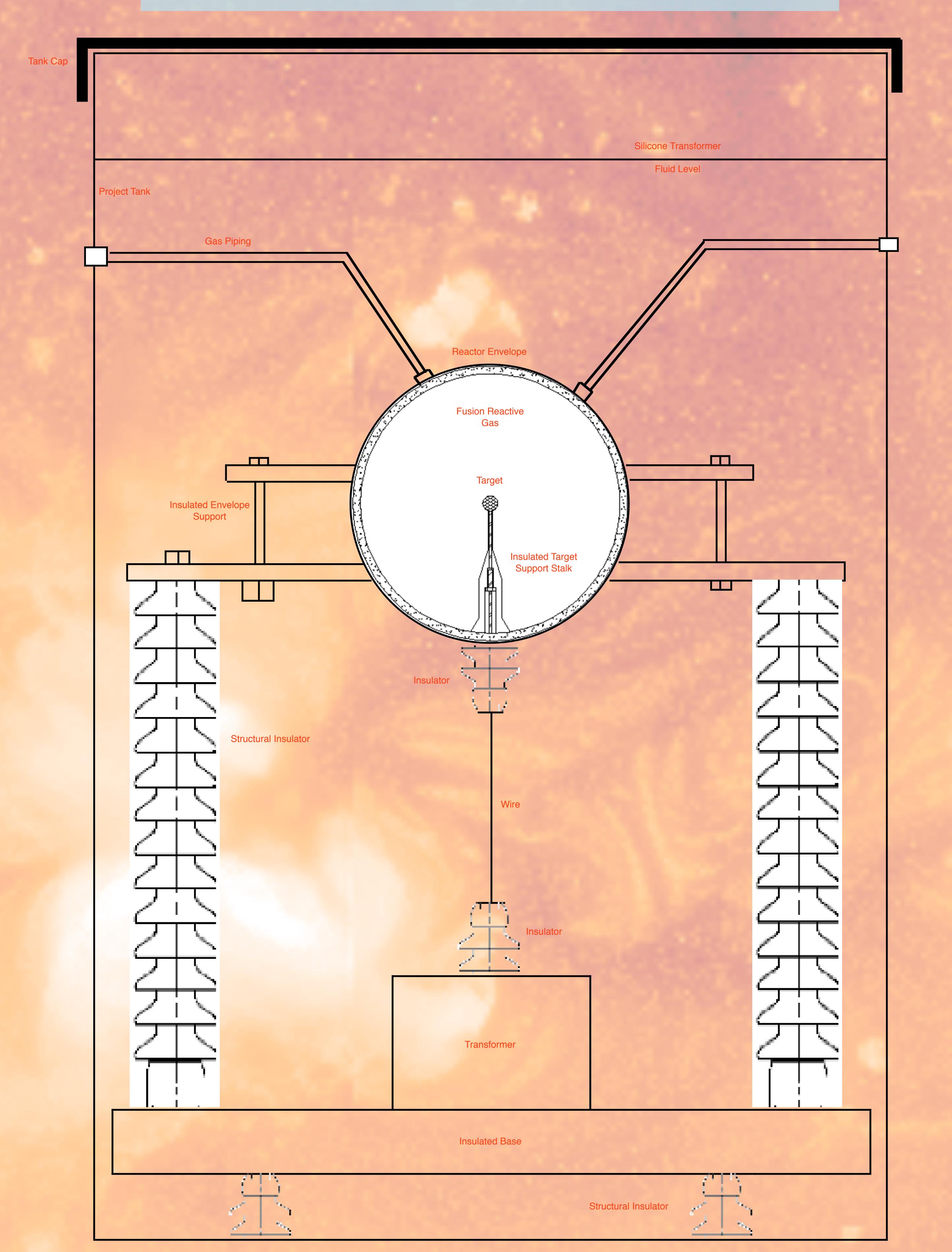
Electron capture at the inner layer of the reactor envelope is complete. The capacitive voltage divider is fully formed and it's intermediate equipotential voltage level continues to increase with increasing potential applied by the power supply. The current flow through this capacitor is at it's minimum due to charge carrier depletion by the collection of electrons along the inner surface of the reactor envelope. The innermost capacitor has the smallest value, therefore the greatest potential develops across this region. This is the acceleration potential for the positive ions. This potential reaches sufficient magnitude for inward acceleration of positive ions to the target resulting in fusion reactions. See Figure 7.

#### F.DISASSEMBLY, ION RECOMBINATION, FUEL & WASTE EXCHANGE, CONTINUOUS REPETITION.

Reaction occurs when the voltage potential across the inner capacitor exceeds a threshold value. Reaction continues for this fractional duty cycle of the AC alternation. As the potential decreases below threshold, the reacting mass disassembles and reactions stop. On potential reversal, charged particles are accelerated in reverse directions and ion recombination occurs forming neutral gas. Fuel, catalyst, and waste gases can be exchanged at this time. The process can continue, cyclicly repeating as long as the drive potential and reaction conditions persist. It can cycle continuously. Cycling gives stability and controllability to the process.

See U.S. Patent US 8,090,071 B2 for further operational details and drawing references.

# EXPERIMENTAL PROJECT



#### 300 WATT PROTOTYPE EXPERIMENT

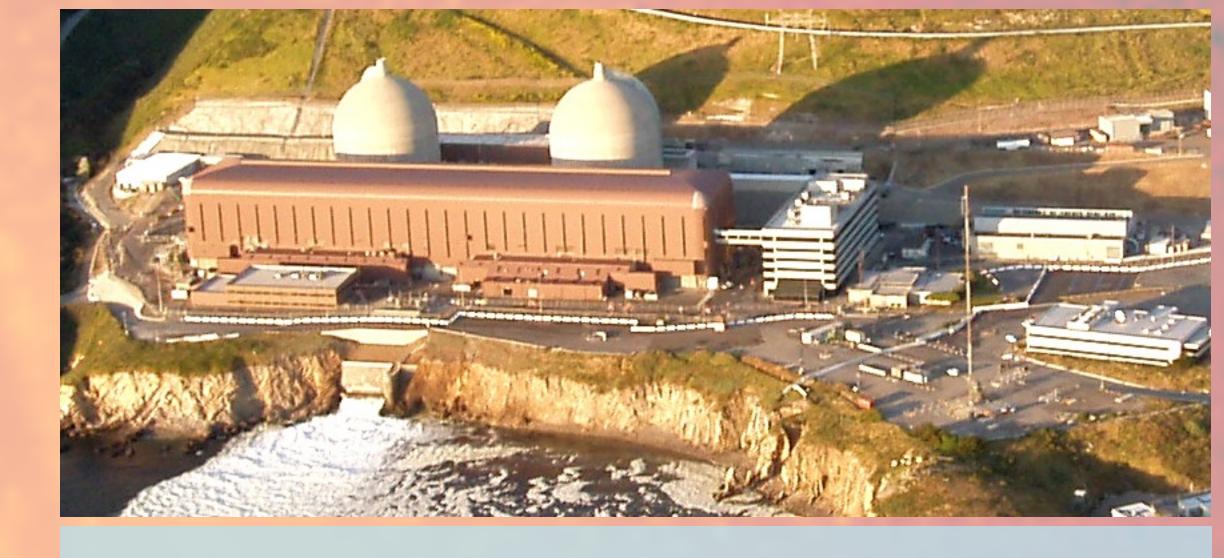
My mahalo and aloha to those whose support, encouragement, advice, council, and patience made this presentation possible.

Dr. Lorenz Magaard Ph.D., Dr. Jarett Ko MD., Dr, Teresa Denney DO., David J. Mikconzyk Esq., Dr. Gary McMurtry Ph.D., Dr. John Wiltshire Ph.D.,

Professor Rick Mills, Mr. Renato C. Equila Chief Draftsman of Bills Engineering Inc., Mr. Robert Edgar of Edgar Audio and Electronics,

Mr. Arpad Dezo, Mr. James Johnson, Catalpa of Oceanography, and the University of Hawaii Glass Art Family.

## WHAT FUSION MEANS



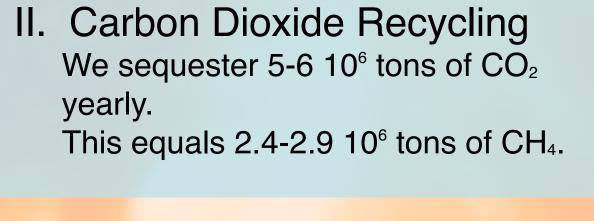
Diablo Canyon 2.25 Gigawatt Nuclear Power Plant



OIL: 16 Supertankers.



COAL: 45,000 car train, 560 miles long.



WATER: 1 Pickup Truck.

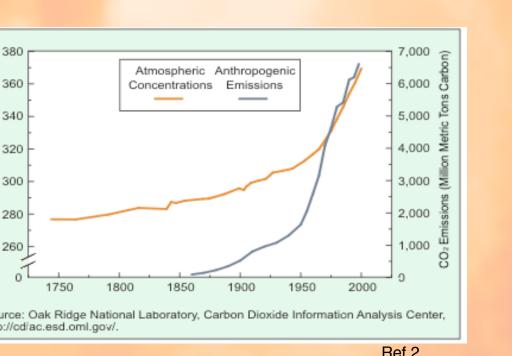
. Unlimited Sustainable

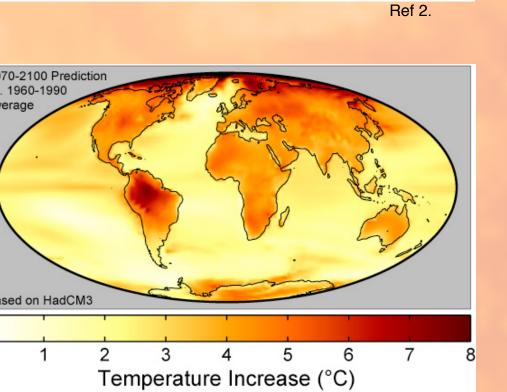
plant for one year: 360 gallons of water.

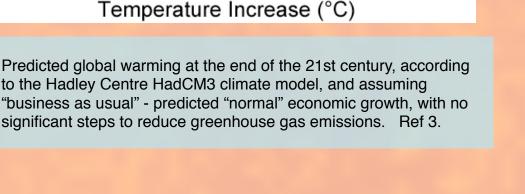
Fuel to operate a 2.25 GW power

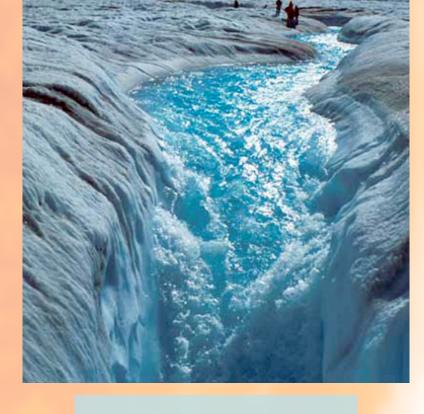
22.5 x 10° barrels of oil.

4.5 x 10<sup>6</sup> tons of coal. Ref 1.





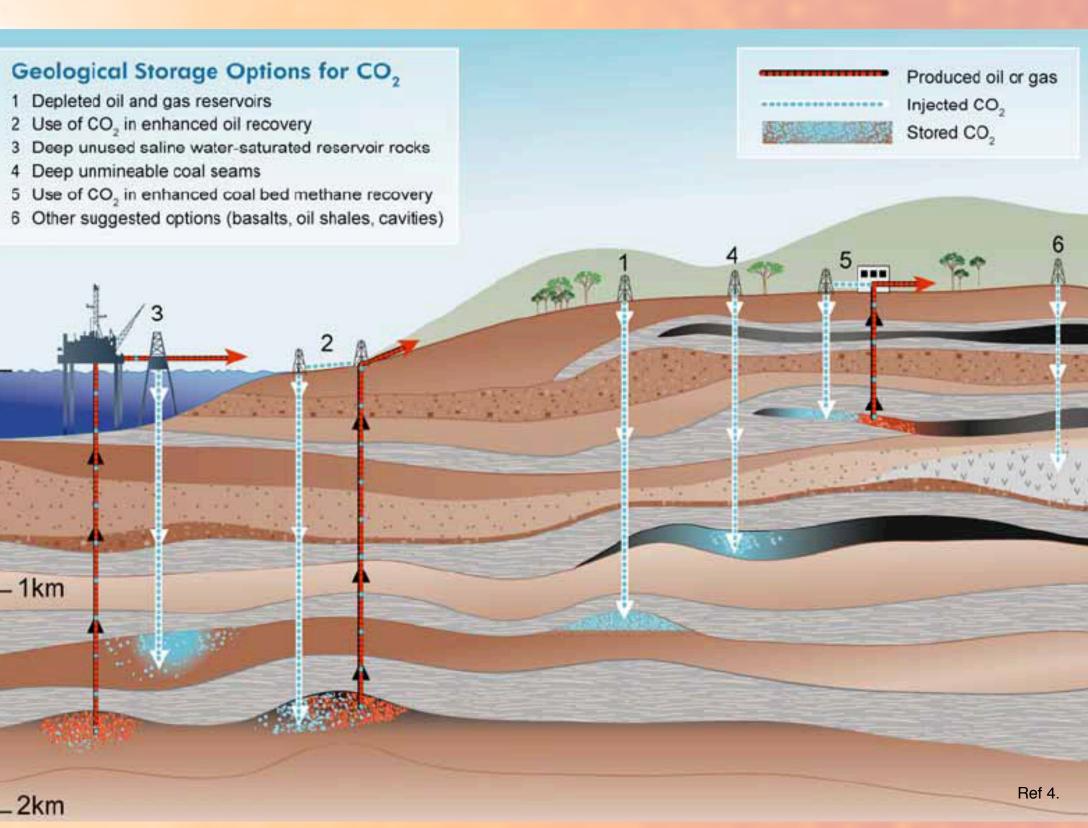




A Melting Glacier



The Warming Arctic Region



A fusion primary energy source, and it's off-spin technologies, will allow the recycling of this valuable carbon into needed pipeline gas with a carbon



#### IV. Recycling of Waste A primary energy source allows recycling of all wastes into raw materials, industrial chemicals, and



References Used

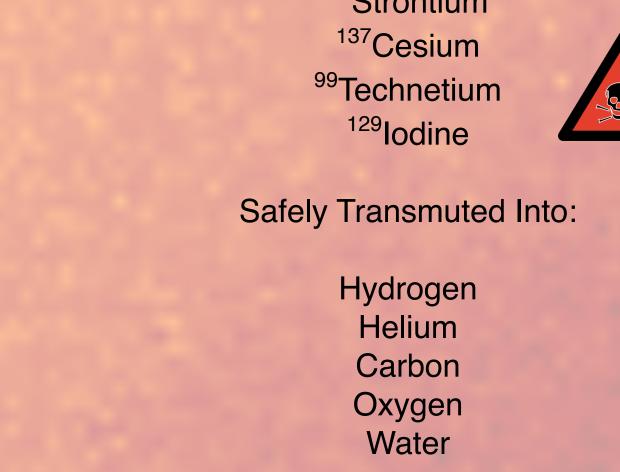
3. http://blogs.ei.columbia.edu/2012/03/07/plugging-the-leaks-in-climate-models/
4. http://esd.lbl.gov/FILES/research/projects/induced\_seismicity/co2/ CO2\_storage\_101.pdf\_page 6.

1. Mallove, Eugene F., "Fire from Ice," John Wiley & Sons, Inc., 1991, page 6.

2. http://www.eia.gov/oiaf/1605/ggccebro/chapter1.html



V. Transmutation Recycling of Radioactive Materials All radioactive materials, irrespective of half-life, can be recycled into non radioactive elements and isotopes.



This sounds like Alchemy, and it is! Changing lead into gold is a nuclear reaction. But the above and similar reactions are significantly more valuable than merely transforming lead into gold!

VI. Safely Dissipating Hurricanes explosions without heavy radio-isotopic fallout. Th provides for offshore disruption and dissipation of



Abstract: Project of a 300 Watt Prototype Fusion Reactor of Hawaii basically complete. The reactor is to be run on deuterium with and without the catalyst gas tetradeuteromethane. Operational parameters of voltage, current draw, temperature, gas pressure, gas mass spectrum analysis, neutron and other radiation output levels will be recorded to calculate power levels, stability, gain, and related factors. Operational maps predictive of larger devices will be derived.

Fusion Energy Solutions

### www.fusionenergysolutions.net