Comment Set B0014
Underground Powerlink Association
(Portions of this comment appear on DVD only)

Sunrise A.06-08-010 Comments on environmental draft EIR/EIS of 12/11/08 by Underground Power Assoc. Feb. 26, 2008

Protecting San Diego County Wilderness Underground Power Line Alternatives

B0014-1

Bankhead Springs California, 3220 feet elevation, overlooking Interstate 8 west

Anthropological Nature Reserve, Research Center and Campgrounds. Proposed location for 160 foot high pylons to carry 500,000 volt power lines, in spite of the fact that underground power line alternatives are available that cost less to install than the high-impact, environmentally destructive overhead high-power lines being proposed, and the over 700 roads and clearings that would be bulldozed through this wilderness along the entire 150 mile route to establish maintenance routes. The damages to this pristine wilderness could never be restored.

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Protecting 22 miles or all of San Diego County's remaining Wilderness areas, Underground Power Line Alternatives

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I. Saving the Last 22 miles of southeast San Diego County with one underground AC segment (see pages 3-18)

II. An underground DC powerlink that saves 150 miles of San Diego County and the Anza Borrego Desert State Park, *at a lower cost* than overhead AC power lines (pages 19-24)

III. Electric Vehicle Power Requirements, at 10 kWh / day, would require 20,000 megawatts (see pages 25-28)

IV. Solar Electric Generation at $1 per watt equals ½ cent per kilowatt hour (see pages 29-32)

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B0014-1 cont.

I. Saving the Last 22 miles of southeast San Diego County with one underground AC segment

While an underground DC power line for the entire 150 mile length of Sunrise Powerlink could provide extraordinarily lower environmental impacts at a considerably lower overall cost, as well as allow for triple the capacity of the Powerlink, nevertheless if the southern route, which apparently has not been environmentally reviewed, is an option then just one underground AC segment spanning the last 22 miles of San Diego County could protect the towns of Jacumba, Bankhead Springs, Boulevard, Manzanita, Tierra Del Sol, Live Oak Springs and Campo, in addition to the Campo and La Posta Reservations, the BLM's McCain Valley, the Anza Borrego Desert State Park, Cleveland National Forest, and the CBH Anthropological Reserve; all of which would be otherwise seriously damaged, made uninhabitable, bisected and permanently degraded by huge pylons supporting an array of hot sagging 500,000 volt overhead power lines.

Fortunately, there is an alternative to the more costly overhead AC power lines which provides for greater efficiency and safety, lower maintenance and installation costs, along with inflicting negligible environmental damages and no permanent losses to any businesses, communities or property along the entire 150 mile route, all of which can save 6 to 20 billion dollars in damages for short and long term losses. The underground DC power line alternative has been proven in over 50 major projects worldwide, and with economic savings that can provide for considerably lower cost installations, by placing 2 six-inch diameter cables underground in one continuously excavated trench that is 1 foot wide and 5 feet in depth. Underground DC offers extraordinary environmental, medical and property protection advantages, all at a lower cost than overhead AC power lines. (See underground DC details in section II, pages 19-24.)

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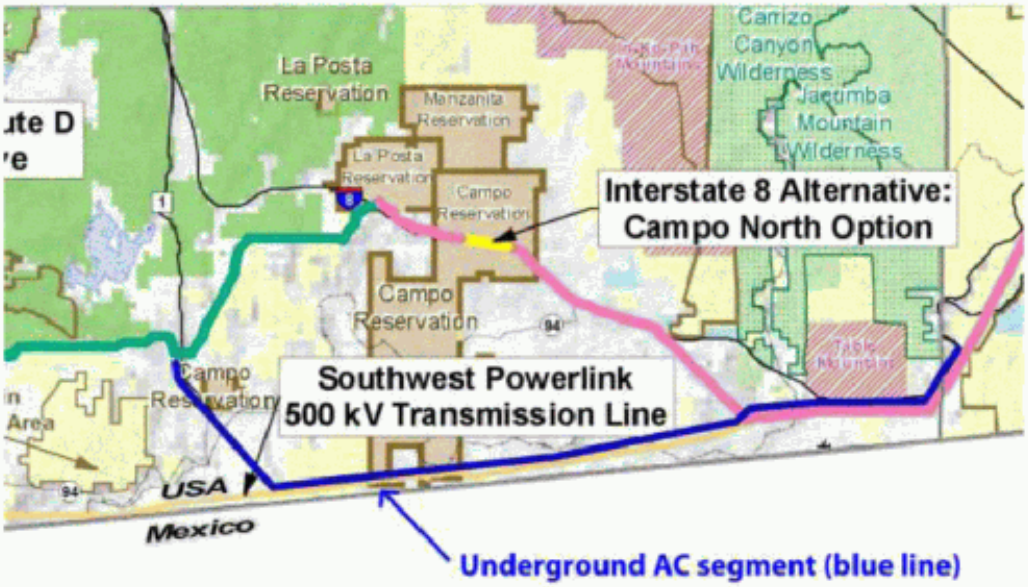

B0014-2

Plan A) Southeast San Diego County 22 mile Underground AC power line Route

This direct underground AC route could protect 7 towns, 2 reservations and 5 wilderness preserves, along with approximately 20,000 acres of homes, business and wilderness recreation areas within the last 22 miles of San Diego County. This underground segment would begin east of San Diego County's eastern border, then extend west 22 miles and connect to the Modified Route D (shown in green at the left side of the map) and continue to extend westerly on overhead AC lines. This route could minimize EMF exposures to regular highway traffic by avoiding excavation under or along any highways, as well as provide a completely fireproof underground route that eliminates wildfire threats, along with minimizing all categories of threat, and almost all security requirements over a significant portion of eastern San Diego County. Further, underground high power lines have been both

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encouraged and financially supported by Homeland Security funds, that apparently have not been requested by SDG&E.

Bankhead Springs California, with the BLM's McCain Valley below extending to the distant mountains, each targeted for the destructive impacts of 500,000 volt high-power lines on almost seven hundred 160 foot tall pylons, with hundreds of roads and clearings leading to the huge pylons. The damages to this pristine wilderness could never be restored.

The image on the following page is an aerial photo (rotated 90 degrees, north is left). The proposed underground AC power line route is shown in red, which extends from a point east of the San Diego County line, westerly past Campo California to connect to the Modified Route D overhead AC power lines, naturally allowing for route variants to avoid private property and keep excavation primarily under existing unpaved roadways and within existing utility right of ways.

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B0014-2 cont.

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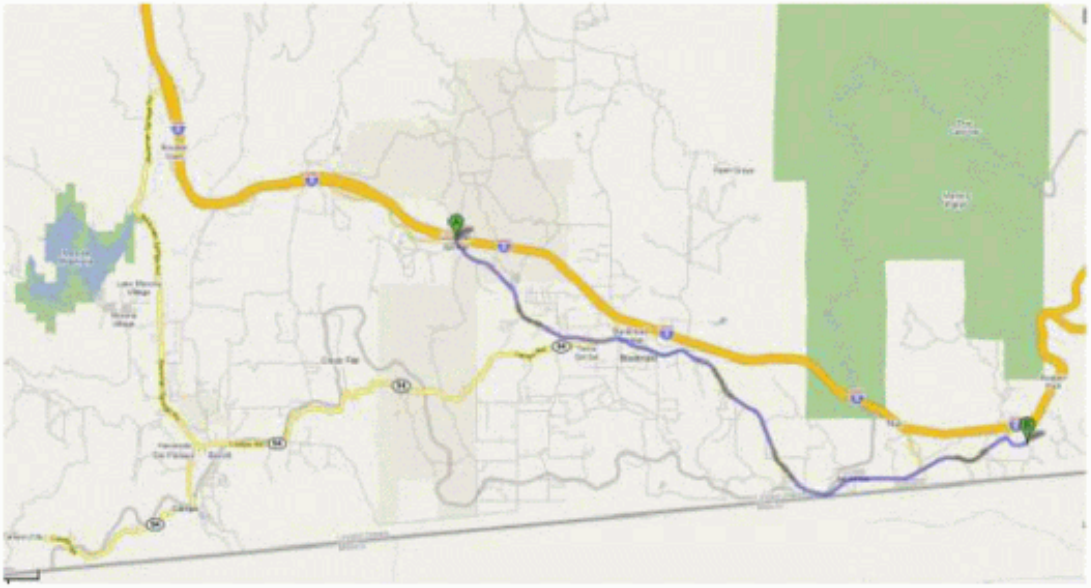

B0014-3

B) Southeast San Diego County 18 mile Underground Route Alternative 2, and related problems, (not recommended, although preferable to overhead power lines)

Map of an underground AC power line (shown as a blue line between points A and B) beneath Old Highway 80, beginning at the San Diego County line and ending at Interstate 8 northwest of the Campo Acorn Casino. Unfortunately this 18 mile route would provide a potent EMF discharge to anyone driving on this section of Old Highway 80. Further the northwesterly direction and windiness of Old Highway 80 make this an inefficient route, providing inadequate or incomplete protection for the region compared to the prior described, more southerly route, which runs in more of a straight line form the county line westerly past Campo California. This route would no doubt cost more than option/plan A, however with greater highway construction difficulties and EMF health related impacts to vehicular traffic.

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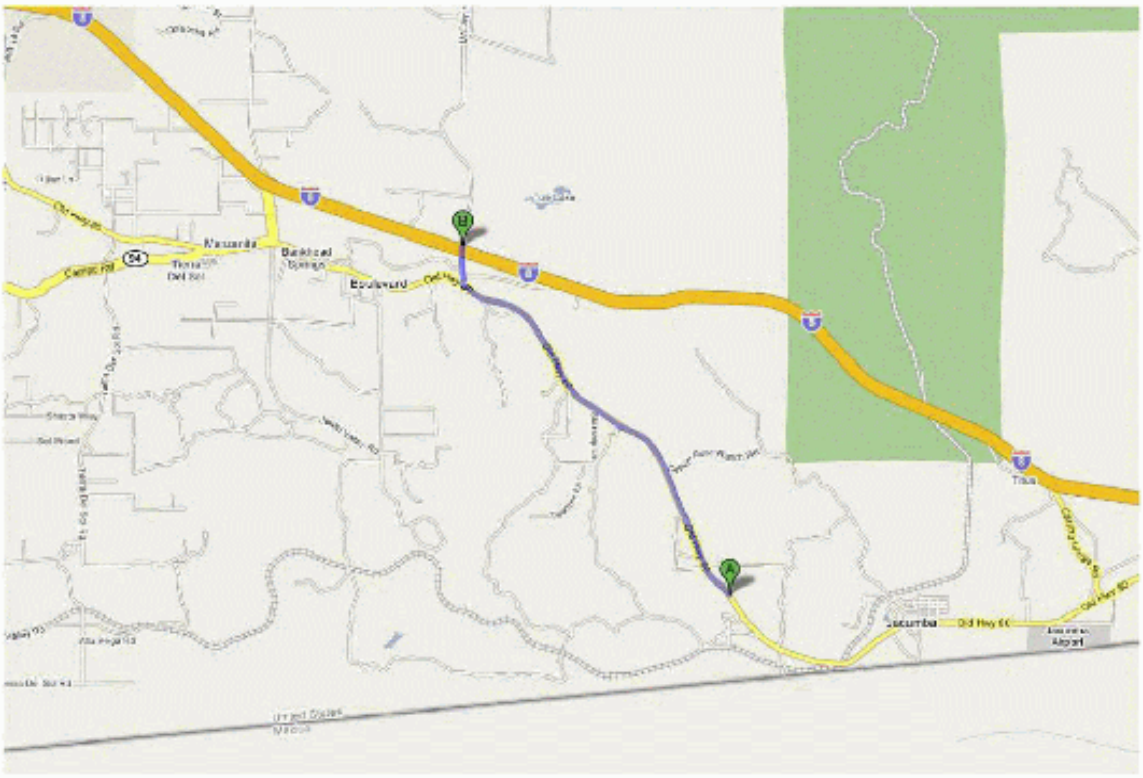

B0014-3 cont.

C) Southeast San Diego County 4.3 mile Underground Route Alternative 3, and related problems, (not recommended, although preferable to overhead power lines)

Map of a limited 4.3 mile underground AC power line (shown as a blue line between points A and B) starting at the point where existing high power lines cross Old Highway 80 west of Jacumba, then northerly under Old Highway 80 to McCain Valley Road north and under Interstate 8 to overhead power lines to desecrate the beautiful McCain Valley BLM property as shown in the picture below. While this short underground AC segment would afford some protection for the anthropological preserve and many ranches and homes in Bankhead Springs, between Jacumba and Boulevard, still a great deal of exposure and destructive impact would remain for the region, along with high EMF levels under Old Highway 80. Consequently the first and more direct route between the county-line to a point northwest of Campo could provide considerably more protection for the region.

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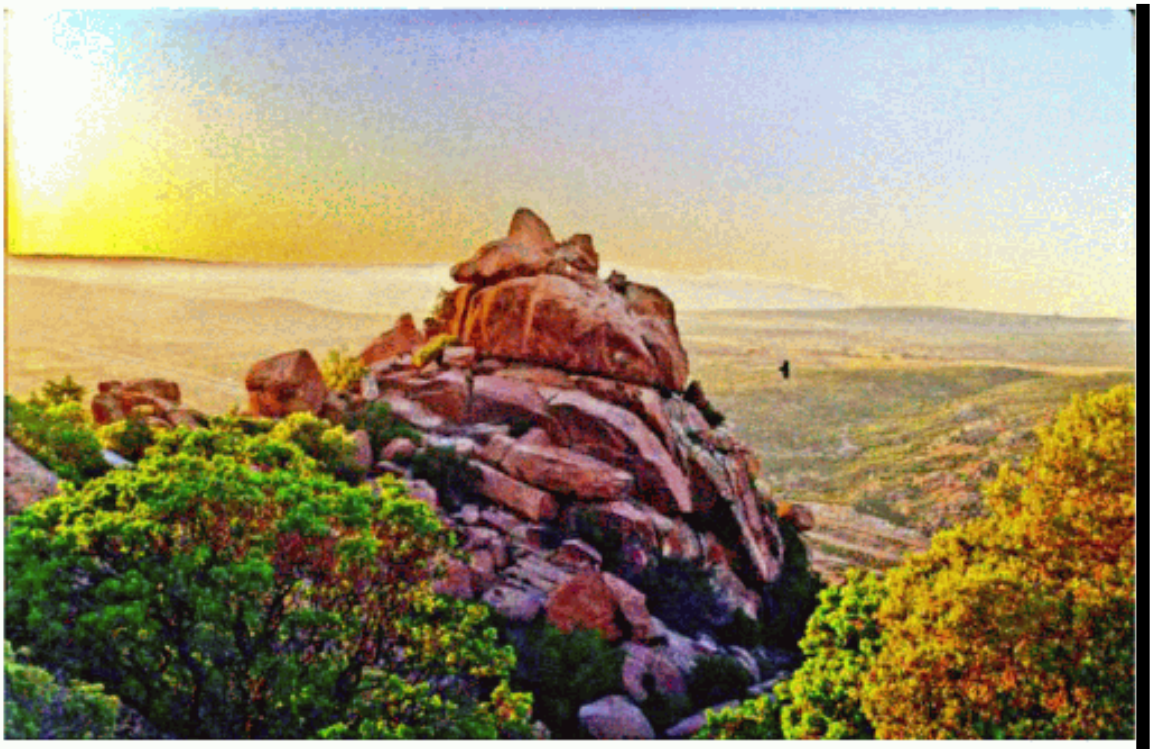

Anthropological Nature Reserve, Research Center and Campgrounds, overlooking the BLM's McCain Valley, each targeted for the destructive impacts of 500,000 volt high-power lines on numerous 160 foot tall pylons, which would end the benefits and uses of the nature reserve, in spite of the fact that lower cost, environmentally benign alternatives are available, that have not been offered any consideration.

B0014-3 cont.

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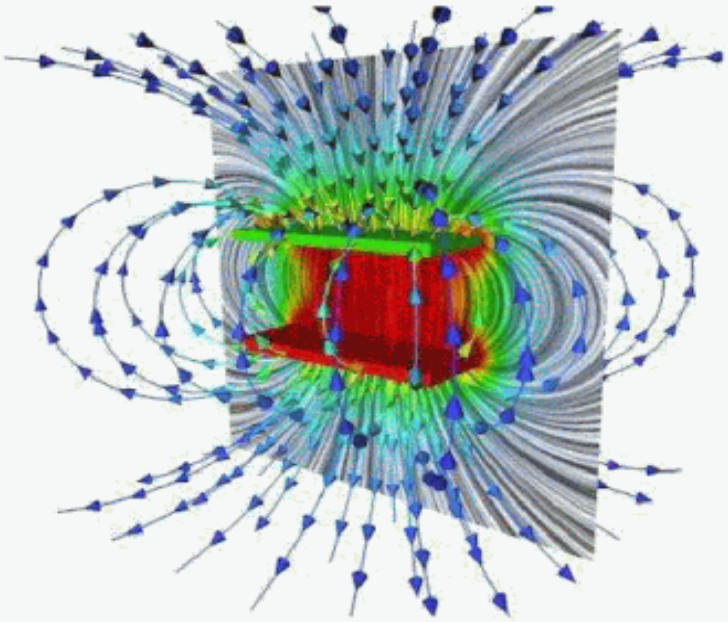
B0014-4

EMF and risks



Electro Magnetic Fields have been used in medicine for over 25 years to align the nucleus of the hydrogen atoms throughout our bodies, so that they will be energized and act as trillions of radio frequency transmitters so that the interior of our bodies can be observed without surgery. However, these electro-magnetic fields are typically delivered to a specific region of our body for just a few thousandths of a second, and all the nuclei of the atoms in our cells will continue to measurably ring for up to 2 seconds. Our molecular structures respond to the effects of electro-magnetic fields or EMF, which does influence our intracellular processes, including regulation, growth, repair and replication, including carcinogenic activation. However, since nearly everybody has been exposed to EMF it becomes impossible to find a local population that would be the control group in any study, which has not already been exposed to EMF. Naturally the electrical industry uses this as an argument to declare that damages resulting from EMF exposure cannot be conclusive; much as the tobacco industry had done for over a century. Nevertheless, medical scientists in Europe, in very large studies have determined that Leukemia rates in children can increase by 70% by simply residing in a home which is a little closer to ordinary power lines. Extra high power lines such as the proposed Sunrise Powerlink can provide hundreds of times greater impact, however it may take a politically influenced government agency perhaps another century to observe and absorb the details of the currently available medical studies. Apparently the loss of thousands or millions of lives worldwide is not particularly relevant when economic issues are being considered.

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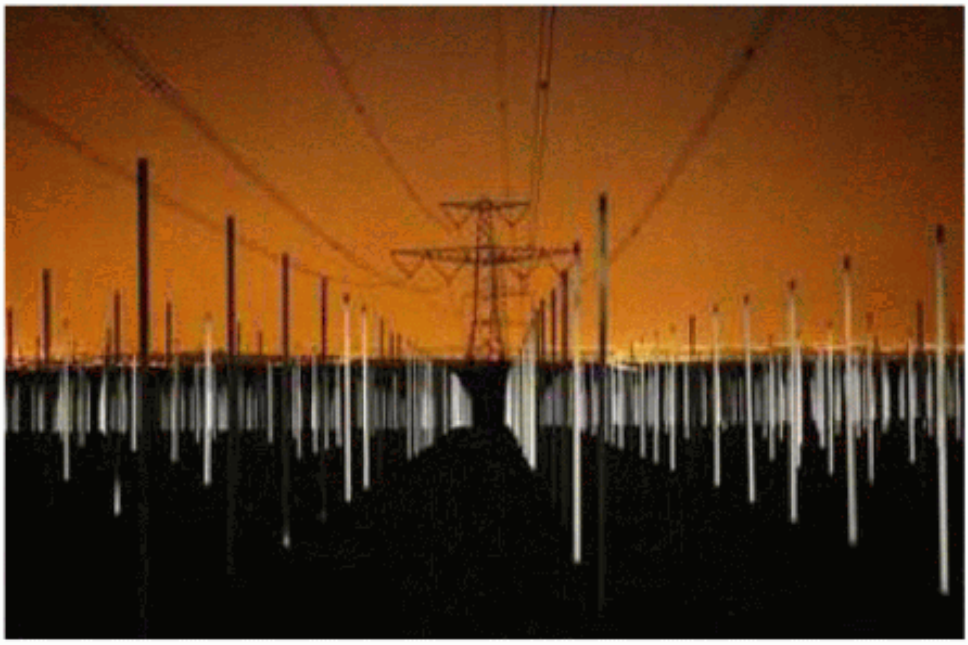
Large scale underground DC power line installations, which do not radiate EMF in France, Australia and Sweden indicates that the difference in cost between installing underground DC and overhead AC, can be considerably less costly for underground DC technology. If environmental damages, cancer deaths, business and property losses were included as a part of the cost of installing the overhead AC high-power lines, then a project such as the Sunrise Powerlink could immediately save at least $6 billion by implementing underground DC power lines instead of AC, and the long-term savings could easily exceed $20 billion. But apparently such massive losses have never experienced by utility companies, because such losses are passed on to the people of California through eminent domain, as a result of being kept uninformed and submissive by judicial and procedural injustice, along with a technically incompetent and corporate controlled media, while politically influenced regulatory agencies proceed to control the review and ultimately the decision making process, and apparently determining the conclusions, while impeding access to any process of consideration, along with little to no substantive interest in any open process of consideration or full restitution of damages.

B0014-4 cont.



Hundreds of vertical fluorescent lights are electrified and illuminated, by proximity to overhead power lines, due to large losses in power during transmission

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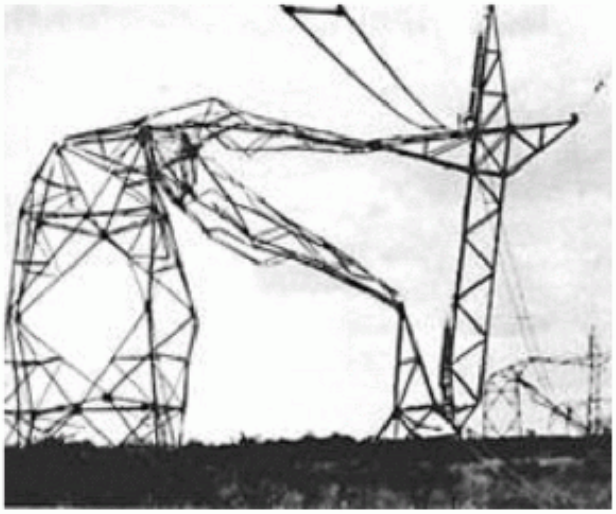
The small increase in hardware cost needed for underground DC has frequently been exaggerated by several hundred percent in order to discredit this option. However using underground DC has several other installation advantages, such as a significant increase in transmission efficiency which can more than cover any cost difference between overhead AC and underground DC power lines, along with providing 300 to 400% greater transmission capacity, by eliminating the need to replicate the Sunrise Powerlink every few years, particularly since plug-in hybrid vehicles have a long term potential of requiring over 20 additional 1000 megawatt Sunrise Power links during the next few decades. Without a doubt Sempra Energy has not researched the cost, safety or environmental advantages of underground DC, that can deliver billions in savings and profits to Sempra Energy or Sempra simply insists on causing needless and massive damages to the people of California. If we can't review the undisclosed ambitions that are determined to inflict needless environmental damages at an even greater cost to SDG&E, then there may be little hope of ever obtaining any beneficial or a cost effective result.

B0014-4 cont.



B0014-5

Wind damages above. Hot sagging cables on pylons increase community dangers, accidents, fires, power outages, environmental, business, medical and insurance losses. What are the benefits? They cost more to erect and maintain than to dig a 1 foot by 5 feet deep trench with two cables. During the night of October 21-22, 2007 wind velocities in excess of 110 MPH were recorded in many parts of Southern California.

- So, why would consideration of local solar or underground DC alternatives be avoided, unless it was predetermined that avoidance of environmental damages, cancer deaths and property loss was of no interest?

B0014-6

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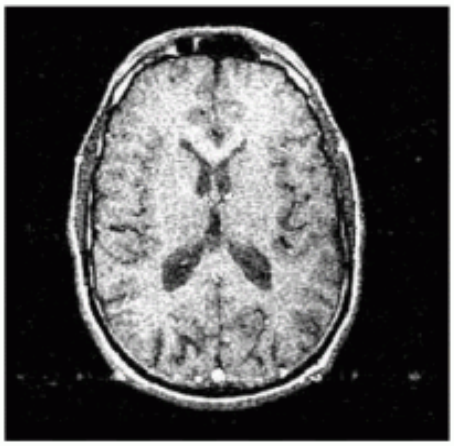
- If that is the position, which is clearly being repeatedly demonstrated by the applicant, then what is the engineering, economic or legal alternative to intentionally destructive interests?

- What justification is there for the applicant to assert the denial of almost all environmental, property, business and medical damages along a 150 mile route, as well as assert an almost complete disregard of 6 to 20 billion dollars in personal, business and real estate losses that thousands of others would incur, without providing for the full restitution of all losses, including the full and complete replacement of all property, environmental qualities and economic losses proposed and inflicted?

- What sort of review would avoid assigning responsibility or economic evaluation to the losses, or encourage massive and needless personal and economic damages, as well as allow irreplaceable environmental losses?

B0014-6 cont.

Magnetic Resonance of Atomic Nuclei



20 millisecond electro-magnetic image of the brain

The basic phenomenon of nuclear magnetic resonance has been known since the 1940s (Le Bihan, 1995), and MRI has been developed over the last 30 years (Cohen & Bookheimer, 1994). Magnetic resonance can be adequately understood in terms of electromagnetic theory, as follows. All atomic nuclei spin on their axes; nuclei have a positive electronic charge; and any spinning charged particle will act as a magnet with north and south poles located on the axis of spin. In magnetic resonance studies, an

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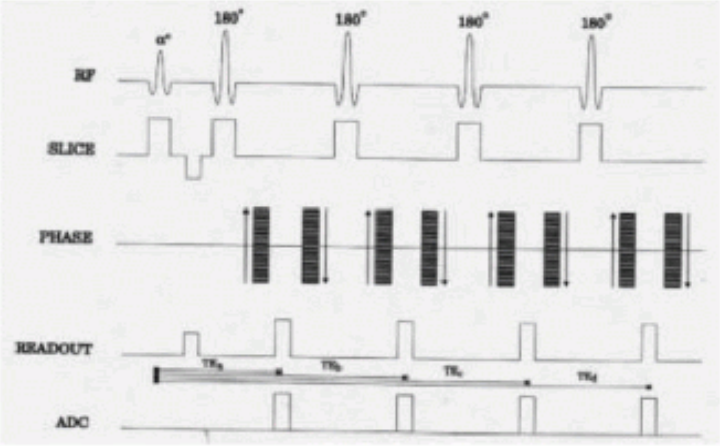
B0014-6 cont.

object is put in a strong, externally-imposed magnetic field ("main magnetic field"); the spin-axes of all the nuclei in the object line up with the field, with the north poles of the nuclei pointing in the "southward" direction of the field. This creates an average vector of magnetization of the object that points parallel to the magnetic field (the main magnetic field is conventionally referred to as pointing along the z-axis) (Horowitz, 1995).



As the nuclei relax, each becomes a miniature radio transmitter, giving out a characteristic pulse that changes over time, depending on the local microenvironment surrounding the proton. For example, hydrogen nuclei in fats have a different microenvironment than do those in water, and thus transmit different pulses. Due to these differences, in conjunction with the different water-to-fat ratios of different tissues, different tissues transmit different radio signals. These miniature radio transmissions can be used to form MRI images (Horowitz, 1995).

Childhood leukemia in the advanced stage

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EMF, Pulsed and oscillating electrical fields do significantly impact the fundamental structure of our biology and interfere with the molecular functioning of cells and tissues, which have been shown to be directly related to human cancer formation in large scale epidemiological studies. A large scale study including 58,000 children has shown a 70% higher incidence for childhood leukemia as a result of proximity to power lines. However, the power industry claims that, "The evidence is not conclusive yet", nevertheless they are unable to point to any other cause.

B0014-6 cont.

Roger Ebert during 2006 after four surgeries to remove cancerous growths from his salivary gland, which has been linked to RF radiation and levels of cell phone usage. The tobacco industry spent over 100 years denying any linkage between smoking and cancer, or any increased health risks. Attorneys are still being paid to protect the profitability of extreme hazards by blaming the victims or deny the risks. However, perpetuating damages does not save money or create wealth.

http://www.neuroguide.com/gregg.html
http://www.mriontheweb.nl/Joomla4/en/Spinecho-2.html
http://www.cis.rit.edu/htbooks/mri/chap-8/chap-8.htm

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Fires started by overhead power lines have burned thousands of homes in California, all without restitution (including our home)

B0014-7

After over 2000 homes were burned during the fall of 2007, once again the Los Angeles County Board of Supervisors determined that during high winds, high-power lines were responsible for most losses, which burned homes up to $17 million in value and totaled $2.26 billion in insurance company losses alone, and have identified high power lines as being the cause of over 351 fires per year in California. As a result Los Angeles County Supervisor Zev Yaroslavsky announced in a televised news conference that he was requiring that the Southern California Edison place all high-power lines in the Santa Monica Mountains and Malibu underground as a fire security requirement. What plans has Sempra Energy implemented to reduce risks and losses due to fire and high speed winds which have exceed 110 miles per hour (during the night of October 21-22, 2007) and have resulted in extreme fire hazards from high power lines, and flames commonly between 100 to 200 feet in height?

San Diego County

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San Bernardino County (Green Valley Lake)

Riverside County (Lake Arrowhead mansions)

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Orange County (Irvine)

The underground engineering solutions recommended here are far less costly than blindly and needlessly perpetuating massive structural and insurance losses. Utility company habits, such as preferring overhead AC for long distance transmission, need to change to provide protection to homes and the environment, as well as save millions in installation costs, compared to more economical underground power line installation and maintenance costs. http://www.cadesertco.org/news/LA%20Times%20Nov%204.pdf

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B0014-7 cont.

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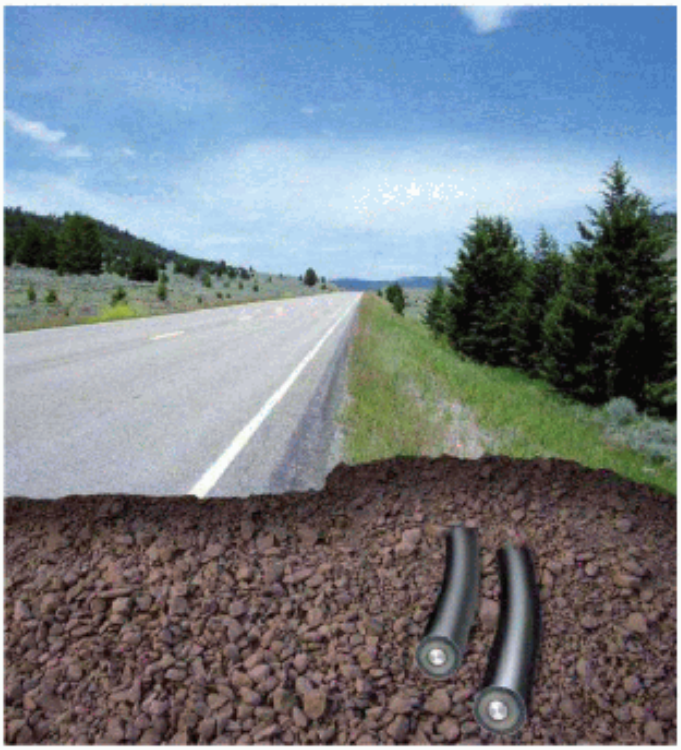
II. An underground DC powerlink that saves 150 miles of San Diego County and the Anza Borrego Desert State Park, *at lower cost* than overhead AC power lines

B0014-8



Two 6 inch underground DC cables can provide 4 times the capacity as the overhead Sunrise Powerlink. The trenching depth for underground cables is typically 5 feet by 1 foot in width with a protective cap and no conduit being used for the direct burial cables.

More than 50 long distance high-voltage, high-capacity underground and under ocean DC power lines have been installed worldwide, with higher capacity, greater efficiency, better

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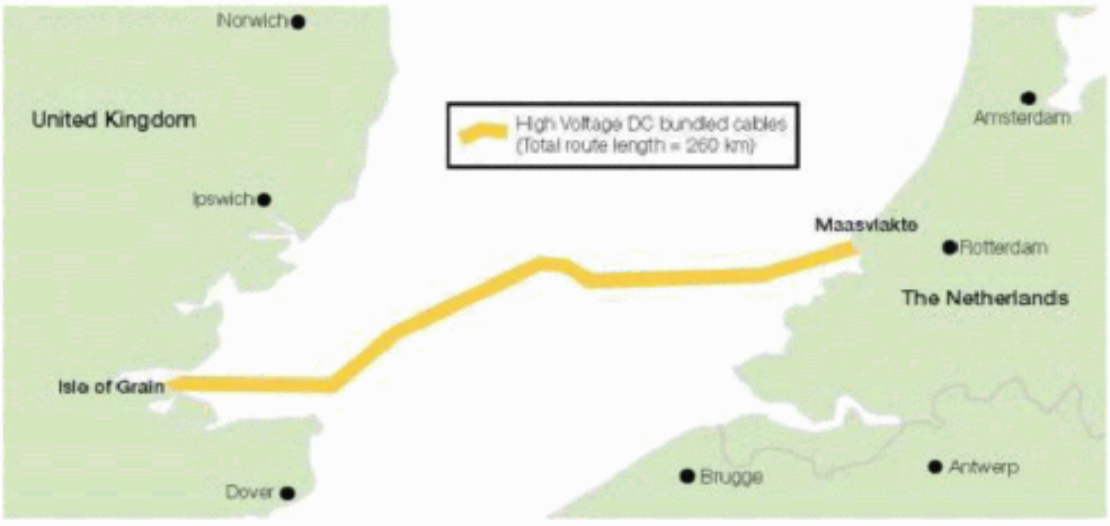
safety, better reliability, vastly lower environmental impact, vastly lower property and economic damages, and at a significantly lower cost than overhead AC power lines.

B0014-8 cont.

The BritNed UK-Netherlands powerlink can deliver 1300 megawatts over 161.5 miles for a cost of 600 million Euros, or $870 million, all of which is higher in capacity and longer in distance than the Sunrise Powerlink and provided at a considerably lower cost than the overhead AC power lines being proposed. With a cost of $870 million for the 161.5 mile BritNed Powerlink, then the $1.4 billion Sunrise Powerlink would cost an additional $530,000,000 (or 1.6 times more) in order to build approximately 700 huge pylons 160 feet in height, all in order to avoid a vastly more benign underground DC option.
http://www.nationalgrid.com/NR/rdonlyres/88FF9856-8D4E-47F9-85DB-B8BDB3CCF24B/17288/BRITNED2.pdf

Table: Selected project examples

Project	Country	MW	Year	Main purpose
SwePol	Sweden-Poland	600	2000	Subsea cross-border inter-connection
Italy-Greece	Italy-Greece	500	2001	Subsea cross-border inter-connection
Murraylink	Australia	220	2002	Underground merchant grid inter-connection
Troll A	Norway	84	2005	Power to offshore gas platform from shore
Estlink	Estonia-Finland	350	2006	Underground/subsea cross-border inter-connect
NorNed	Norway-Netherlands	700	2008	Subsea cross-border inter-connection
Nord E.ON 1	Germany	400	2009	Underground/subsea offshore wind park
SAPEI	Italy	1000	2009	Subsea island connection
BritNed	UK-Netherlands	1300	2009	Subsea cross-border inter-connection



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