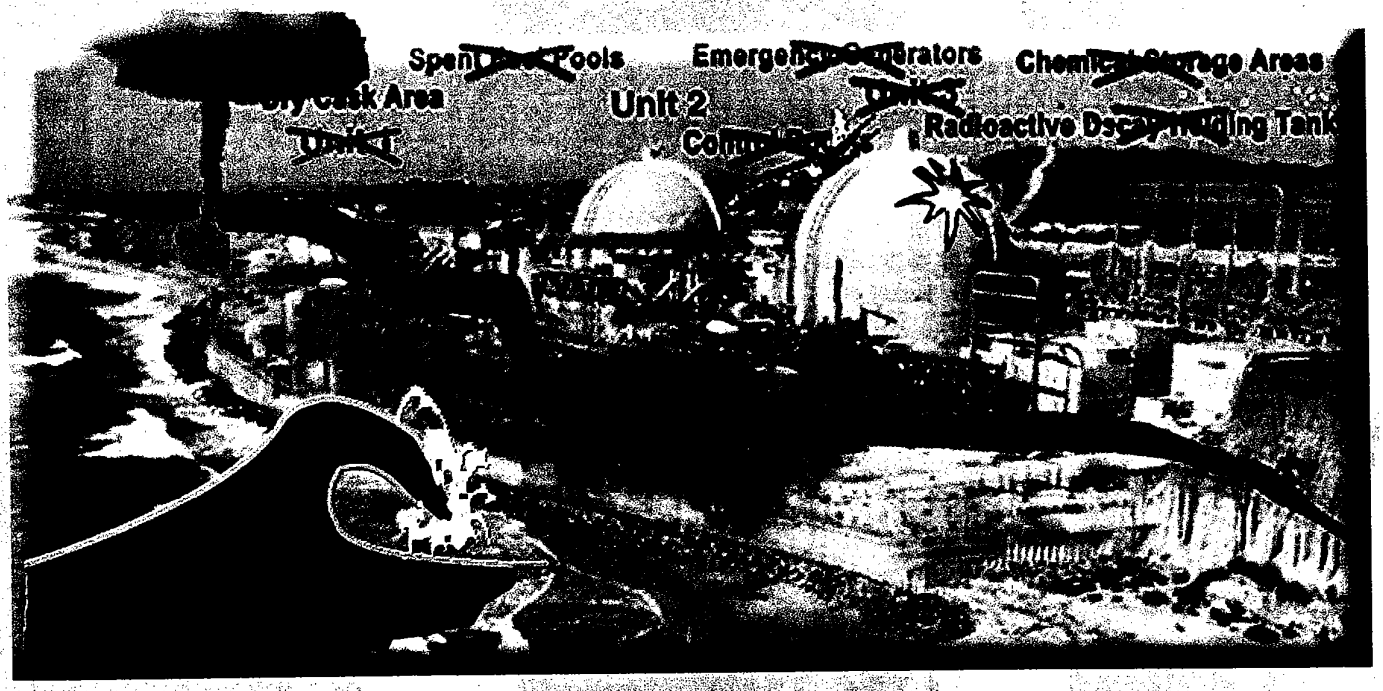
Protecting California

Preserving our environment for future generations...

Why San Onofre cannot be part of the solution



by Russell D. Hoffman
Concerned Citizen

May, 2005

RE: CPUC 2004101008 (A.04-02-026)

Over the next few months, California state regulators will decide if they are going to approve a Steam Generator Replacement Project (SGRP) for San Onofre Nuclear WASTE Generating Station (usually abbreviated SONGS, not SONWGS, because the WASTE is ignored by the operators of the plant as well as by the California Public Utilities Commission, the NRC, etc.).

It's practically inevitable that the CPUC will approve the project, because the CPUC WILL NOT consider the danger from meltdowns, they WILL NOT consider the hazardous waste that is being created without anywhere to put it, they WILL NOT consider that the power supply they call "baseline" is prone to sudden and prolonged (and expensive) outages, and they WILL NOT consider renewable energy alternatives -- except to tell us, on the one hand, that renewables cannot replace San Onofre, and on the other, that three to four times the electrical output of San Onofre and Diablo Canyon together will be added using renewable resources in the next few years anyway! Their position doesn't make *ANY* sense!

If the SGRP is approved, Southern California Edison's ratepayers (about 4,000,000 people, of which this author is *not* one) should expect to see at least a 2% increase in their utility bills. But even a 2,000% increase in their utility bills would not be enough to pay for an accident. SCE survives by lying to the public, with the help of the Nuclear Regulatory Commission and the Department of Energy. The CPUC covers its eyes and pretends it has no responsibilities towards safety. It's wrong.

Contents:

STOP SAN ONOFRE'S STEAM GENERATOR REPLACEMENT PROJECT! CONTACT YOUR STATE REPRESENTATIVES! TELL THEM "ENOUGH IS ENOUGH" -- WE DON'T WANT ANY MORE NUCLEAR WASTE IN CALIFORNIA! JUST TELL THEM IT'S OVER – THE JIG IS UP – WE'RE DYING AND WE'RE SICK OF IT.

The Nuclear Mafia Lies to You

Experts know that the Department of Energy, the Nuclear Regulatory Commission, and the nuclear industry LIE to the public and the media. Here are four experts, all speaking recently (May, 2005) about the lies citizens must deal with:

Dr. Helen Caldicott (Grist Magazine Interview):

"Well, of course, [the nuclear industry will] do anything. I've been dealing with them for 30 years and they lie -- they frighten me. I can debate with generals about nuclear war and feel much more comfortable because they know that what I'm talking about is true. The nuclear industry just lies its way through the whole thing."

Founder, Physicians for Social Responsibility (PSR), Nuclear Policy Research Institute (NPRI) and others. Nobel Peace Prize Nominee. Harvard-educated pediatrician with 19 additional *honorary* degrees.

www.nuclearpolicy.org

Harvey Wasserman, Author, Activist, Speaker:

"The nuclear industry is just as dishonest, deceptive and dangerous as it was fifty years ago, when the whole thing got started as a happy face for the nuclear weapons industry, and its solution for the nuke waste problem is the same as it was then, i.e. none whatsoever. What's different now is that wind, solar and the other green alternatives are clearly and unmistakably established as cheaper, safer, cleaner, more reliable and faster to build. And, of course, the nuke industry is continuing to lie about that as well...but now out of desperation, as its days are clearly numbered."

Free Press Senior Editor and columnist, author or co-author of six books, including four on nuclear power and renewable energy, and two histories of the United States.

www.harveywasserman.com

Jack Shannon, Naval Reactor (NR) Designer, KAPL:

"Please believe me when I tell you that when a DOE employee is talking to you he is lying. I could write a thousand page letter about the corruption within the DOE/NRC/NR"

Nuclear Physicist/Nuclear Engineer/Manager of Nuclear Safety, Manager of all safety, for thirty years at Knolls Atomic Power Laboratory.

www.mindspring.com/~kapl

Paul Gunter, Director, Reactor Watchdog Project, Nuclear Information and Resource Service:

"Both the Government Accountability Office and the Office of the Inspector General have concluded in numerous reports that NRC has repeatedly placed the financial interests of the nuclear industry above public health, safety and security. It is common knowledge that when you mix money and risk, that's called gambling. Time and again, NRC has subordinated public safety margins to industry profit margins in an increasingly dangerous nuclear gambit. The Atomic Energy Commission was abolished for its promotion of nuclear power and shielding the industry from enforcement policy. Like father, like son, NRC has surpassed these same traits of its predecessor and even more so."

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www.nirs.org

So when someone tells you, for example, that they are absolved from legal and moral responsibility for their actions because: "The federal government has exclusive regulatory authority over radioactive materials and, as a result, the State of California has no ability to regulate the storage, use, transport, or disposal of radioactive materials." you don't have to believe it! (That quote is from an email from the ASPEN DEIR group to this author.)

"Germany is phasing out nuclear power (as are Belgium and Austria), because they [Germany] have over 14,000 megawatts of windpower, which is equal to 14 average sized (1000 megawatt) nuclear power plants -- right now. And they are erecting more than 1000 megawatts of [additional] windpower every year!! Also, we are called 'the Persian Gulf of Wind' -- 'we' meaning the USA."

-- Conrad Miller, M.D., Author, The Most Important Issues Americans THINK They Know Enough About... Part 1 (Crest of the Wave, Copyright 2004, ISBN: 0-9753832-7-2)

Germany, about the size of Montana, has 83 million people, and a GDP of ~$1.8 trillion.
California is 3X the size of Montana, has 35 million people, and a GDP of ~$1.3 trillion.

Facts About Radiation:

Radiation is the breakdown of an atomic particle into smaller atomic particles. The "daughter product" is often also radioactive, as is its daughter, in a long chain.

1 Curie = 2.22×10^{12} decays per minute
= 2,220,000,000,000 decays per minute

1 Becquerel = 1 decay per second

One half-life is the time it takes for the first half of all the atoms in a pure sample of a substance to decay to their first daughter product(s).

It takes about 20 half-lives for a radioactive substance to decay completely.

There are four types of "ionizing radiation" which can be emitted in this process:
alpha particles, beta particles, x-rays, and gamma rays.

Just one decay of one tritium atom (radioactive hydrogen) -- one of the lowest-energy atomic decays of all -- will destroy approximately 20,000 chemical bonds if it occurs inside your body. Your body survives by reproducing your DNA pattern over and over again as perfectly as possible. Radiation and survival don't mix!

Did you ever notice how carefully medical techicians try to aim and localize all medical x-rays, as well as administer as low a dose as possible and not give them at all to pregnant woman and infants? That's because radiation is extremely hazardous in vanishingly small quantities.

Facts About San Onofre:

2 operating reactors: Unit II (1983) and Unit III (1984). (Unit I was started in 1977 and shut down in 1992; SCE considered required safety upgrades too costly.)

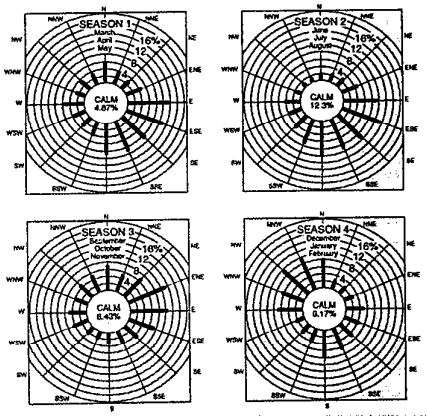
When both units are operating (less than 6 days per week, on average, after refueling shutdowns, extended repair outages, and emergency SCRAMs) they are rated at a combined 2,254 megawatts peak electrical output.

Southern California Edison owns 75%; SDG&E owns 20%. The cities of Riverside and Anahiem own the rest. (Note: Both cities are more than 30 miles away from the plant and thus are well outside the 10-mile evacuation zone around the plant.)

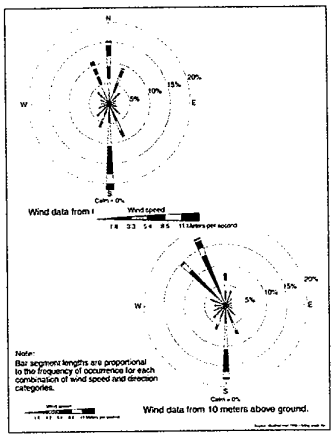
Unit II and Unit III's reactors were designed by Combustion Engineering.
The new steam generators, if permitted, will be built by Mitsubishi in Japan.

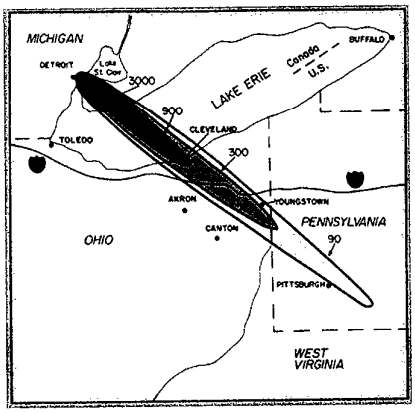
Wind Roses and Deadly Plumes

Shown below are some typical "wind roses" from various Environmental Impact Reports. In its evaluation of the SONWGS Steam Generator Replacement Project (SGRP), the CPUC does not consider the issue of where a meltdown's deadly plume might travel.



NOTE: Bars denote the directions from which the winds occur. Source: NASA 1986





Shown on the left is a "typical" plume from a one-megaton nuclear explosion. The plume stretches about 200 miles, from Detroit ("Ground Zero") to well past Pittsburgh. The graphic assumes a uniform 15-mph northwest wind. Contours show the one-week accumulated dose (assuming no shielding) of 3000, 900, 300, and 90 rem.

Shown again below as "A" is a typical plume from a nuclear weapon, while "B" is the plume from a nuclear attack on a nuclear power plant such as San Onofre.

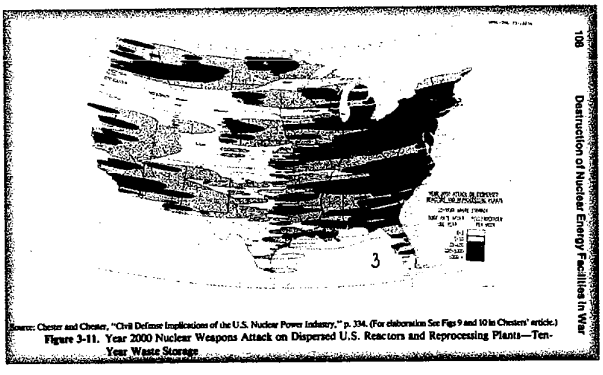
The above image is from:

Radiation Protection: A Guide for Scientists and Physicians, 3rd Ed., by Jacob Shapiro, pg 419, Harvard University Press, MA, 1972, 1981, 1990 (colorized by this author). (According to the caption, the original source was OTA, 1979.)

The above image is from:

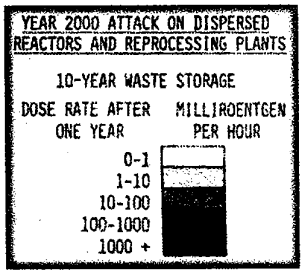
Environmental Consequences of Nuclear War, SCOPE 28, Vol. 1, Physical and Atmospheric Effects, 2nd Ed., pg 271, Scientific Committee on Problems in the Environment, John Wiley & Sons, 1985, 1989 (colorized by this author).

The map in the lower left is from the 1980 seminal work by Bennett Ramberg, Nuclear Power Plants as Weapons of the Enemy: An Unrecognized Military Peril. Shown are plumes from attacks on our reactors and reprocessing plants.

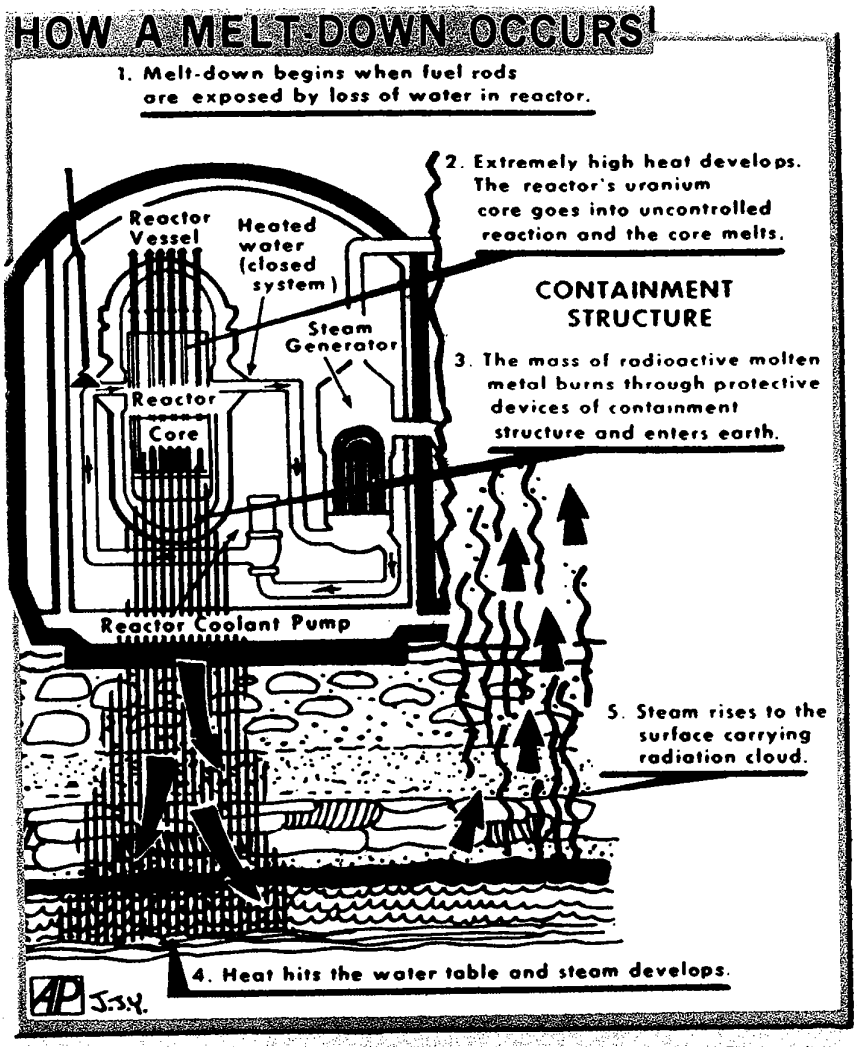


Source: Chester and Chester, "Civil Defense Implications of the U.S. Nuclear Power Industry," p. 334. (For elaboration See Figs 9 and 10 in Chesters' article.)
Figure 3-11. Year 2000 Nuclear Weapons Attack on Dispersed U.S. Reactors and Reprocessing Plants—Ten-Year Waste Storage

The book warned of the extreme danger America faces because of its nuclear power plants and other nuclear facilities, which are targets for terrorism. The key from the map shown on the left is enlarged on the right.



San Onofre is a Pressurized Water Reactor (PWR) similar to the reactor shown in this drawing and can MELTDOWN in a similar way.



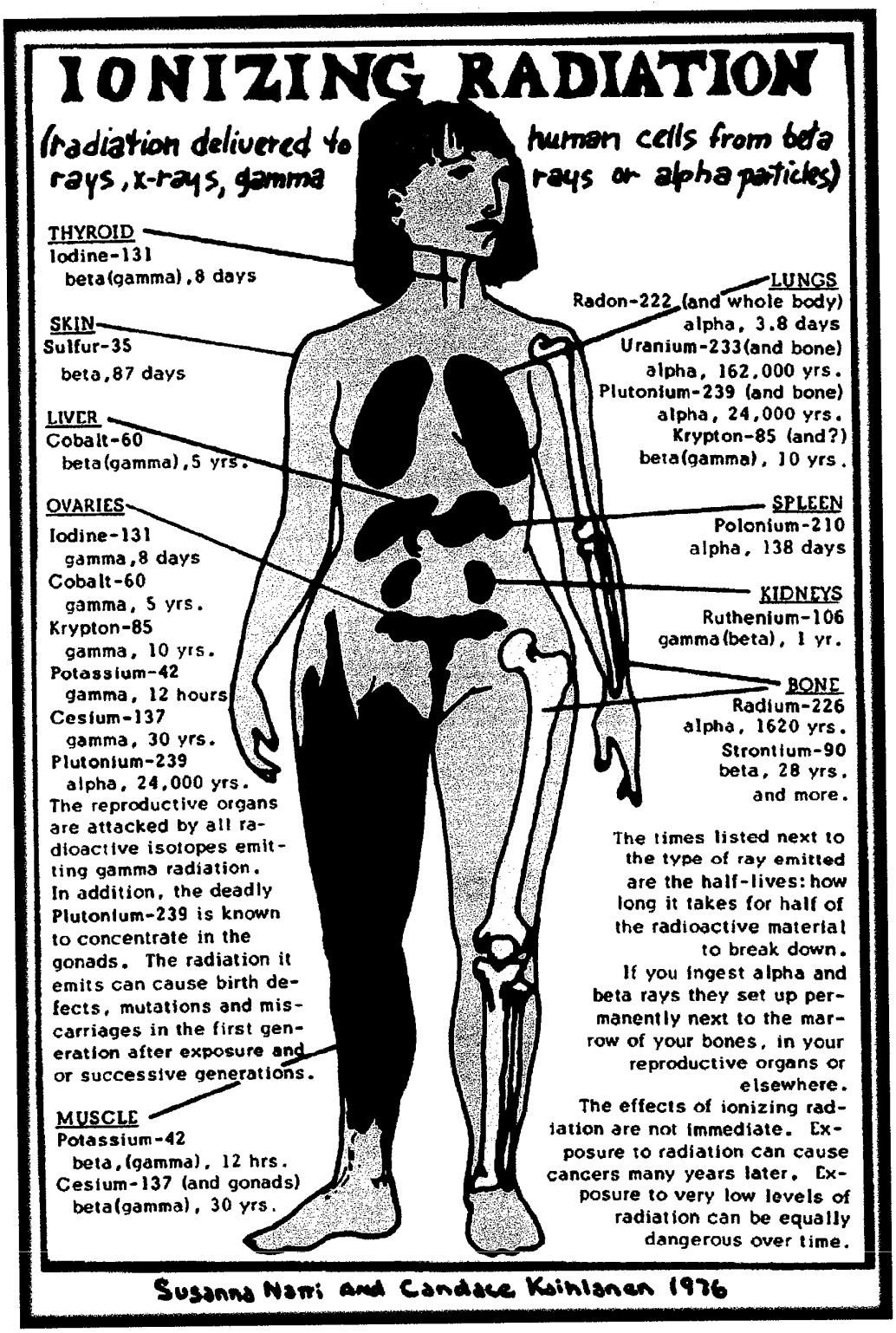
AP Laserphoto

From: The Bridgeport (Connecticut) Post, March 31st, 1979
(saved, scanned, and colorized by this author)

CRAC-2 est. casualties and costs for San Onofre
(Note: CRAC-2 values are U.S. Government 1982 figures which minimize the potential damage in a number of ways.)

Unit II CRAC-2 est."Worst Case" Casualties: **68,000**
Property Damage: **$186 Billion**

Unit III CRAC-2 est."Worst Case" Casualties: **68,000**
Property Damage: **$182 Billion**



The above image is from:

The Nuclear Fix: A Guide to Nuclear Activities in the Third World
Authors: Thijs de la Court, Deborah Pick, & Daniel Nordquist
World Information Service on Energy (WISE), The Netherlands, 1982
(Page 8; colorized by this author)

Note: "beta rays" (displaced, high-energy electrons) are now more commonly referred to as "beta particles"

TOP 25 REASONS TO KEEP SAN ONOFRE OPEN -- *ANSWERED*

By Russell D. Hoffman, Concerned Citizen, Carlsbad, CA
The author is not connected with nuclear power or any other power entity
Please see list of URLs at the end of this document for more information

May 6th, 2005

Re: California CPUC DEIR; App. # A.04.02.026; SCH No. 2004101008

1) We need San Onofre's electrical output
2) We need San Onofre's jobs
3) We need San Onofre's tax base
4) Nuclear Power is cheap energy
5) Nuclear Power is safe energy
6) Radiation in low doses is harmless
7) Coal is the only alternative, or some other fossil fuel
8) Nuclear power is a proven technology
9) Renewable energy isn't ready
10) Renewable energy, even if it's ready, can't replace all that many other sources, it can only do a little bit
11) It's too expensive to switch now
12) People studied this in the past and decided it was ok
13) People want nuclear power
14) It's anti-technology to be against nuclear power
15) Only ignorant people oppose nuclear power
16) Scientists supports nuclear power
17) The media supports nuclear power
18) The military supports nuclear power
19) The government supports nuclear power
20) Nuclear power was democratically chosen by the people
21) More people have died in Ted Kennedy's car than from nuclear power
22) Leading "anti-nuclear" scientists and researchers have been discredited
23) The "anti-nuclear" activists are a bunch of whackos
24) We're all going to die somehow anyway
25) But we've ALWAYS done it like this!

1) We need San Onofre's electrical output

The 2000-2001 California blackouts were ENGINEERED BY CORPORATIONS. In prior years, we actually had HIGHER peak energy usage with NO blackouts. What was different? At one point **THREE OUT OF OUR FOUR** nuclear power plants in California were out of commission (one for an extended period because of a fire), and the power companies did not want us to realize that we simply don't need nuclear power. So they invented the **blackouts** just at a time when it was both EASY and PROFITABLE for companies like ENRON to do so.

We might have **shut nuclear power down in California completely THEN** if the activists had ***BANDED TOGETHER ON THE SUBJECT AT THE TIME.***

We don't need San Onofre's energy output. Aside from the enormous inefficiencies in what is called the "Nuclear Fuel Cycle," it is dangerous and dirty, even when it is simply running without obvious problems.

Also, there are many ways to harness the energy nature already produces (and then throws away). There are ***hundreds*** of methods for producing large amounts of electricity which were inconceivable or impossible to build when nuclear power was chosen as the "solution" to our electrical energy problems, but which are **now** technologically practical. Think plastics, computers, buckyballs, nanotechnology, expert systems, artificial intelligence, robotics, transistors, distributed processing/Internet/virtual presence, carbon fiber, kevlar, titanium, lasers, DVDs. Think efficiency. Only about 7% of America's total energy usage goes directly to producing electricity. The State of California has officially asked Californians to try to reduce electricity usage by 20% -- MORE than San Onofre and Diablo Canyon COMBINED deliver to California! This writer does not believe cutting back is the answer. Clean energy is the answer.

If you look at TYPICAL GOVERNMENT ENVIRONMENTAL IMPACT STATEMENTS such as the current State of California's CPUC DEIR for the Steam Generator Replacement Project at San Onofre, you'll see that realistic alternatives, such as OFF-SHORE WIND POWER SITES, TIDE POWER, WAVE POWER, HYDROELECTRIC POWER, MORE LONG-DISTANCE TRANSMISSION LINES, AND SO ON are ALL IGNORED OR PAID ONLY THE BAREST "LIP SERVICE."

2) We need San Onofre's jobs

Jobs? You want to talk about JOBS? First of all, all any nuclear power plant is, is a big bucket of bolts. It's not magic. It's not lab technicians in white coats performing technological miracles. No, nuclear power is just like any other big business, except for the "quap" it creates. Nuclear power plants are nothing more than "Pipes, Pumps, Valves, and Vessels" just like a hydroelectric plant or a coal-fired plant or an oil-fired plant. But, because of all the "safety" systems, "backup" systems, "instrumentation" systems, "feedback loops", etc. etc. etc., nuclear power plants are enormously complicated -- so complicated that no one can be quite sure of what any particular plant is actually doing at any particular moment. This is the opinion of highly qualified experts in instrumentation and control.

Nuclear power facilities such as San Onofre -- even with the "efficiency" of having two nuclear generators at the site (three, if you count the closed one that still sits at the site) -- are so complicated that they require, on average, about 1,500 people to operate where a conventional power plant would require about 1/10th as many people for the same power output, and a renewable energy power plant might only require 1/10th of that (15 people) to operate.

During refueling, the work force DOUBLES at nuclear power facilities, and yet power output is ZERO for the unit being refueled. If the operational unit fails during refueling of the other unit, the facility produces ZERO power -- in fact, it drains enormous amounts of power FROM THE GRID to maintain its temporary "off" state! Nuclear power is UNRELIABLE if nothing else.

All these people are skilled in some sort of technology and most are highly qualified to work on renewable energy systems if we shut San Onofre down, or they could be retrained. But it's the "quap" that makes ALL the difference! We need to shut San Onofre down because day by day, it creates enormous amounts of deadly radioactive poisons, which can be turned into a deadly POISON GAS and CARCINOGENIC PARTICULATES at any moment, by a terrorist, tsunami, earthquake, fire, flood, asteroid, riot, operator error, equipment failure, train wreck on the nearby tracks, procedural error (where the operators do what the book tells them to do, but the book is wrong), or some other catastrophe. NO RENEWABLE ENERGY SOURCE IS CAPABLE OF SUCH CATASTROPHIC EVENTS.

3) We need San Onofre's tax base

Huh? A valid tax base can ONLY come from something which produces something of VALUE to society. Everything else, no matter how it might appear, is, in fact, a LIABILITY to society. We are burdened with 4,000,000 pounds of "Spent Fuel" at San Onofre Nuclear WASTE Generating Station. What will society do with this waste? Knowledgeable experts know that Yucca Mountain and every other solution are NOT FEASIBLE, not wanted by their local communities, dangerous as all get-out to get the waste to the sites, and prone to long delays. In other words, THE WASTE STAYS HERE. It will cost a fortune. It will be dangerous. **THE MORE THERE IS, THE MORE DANGEROUS IT IS.** In recent years, activists in California argued amongst themselves whether dry cask storage was safer than spent fuel pools or not. But it was not an "or" question, **because the reactors still are running.** And therefore, we have BOTH spent fuel pools AND dry casks! If we shut the reactors down, then in 5 to 10 years we could eliminate the spent fuel pools (which most people feel are more dangerous) or we could at least STOP BUILDING MORE DRY CASKS, which this writer feels are much more **vulnerable to terrorism.**

4) Nuclear Power is cheap energy

No, it isn't, and let's not bother talking about the TRILLIONS OF DOLLARS even a "small" MELTDOWN would cost! Right now, wind energy is the cheapest available energy, and will get relatively cheaper over the next 50 years and beyond, compared to non-renewable energy solutions, which will only continue to get more expensive. Combined offshore wind/wave devices take no land, do practically no environmental damage, and can provide a constant baseline of power along with more than enough peak power to supply all of California with electricity for decades to come, INCLUDING energy for ELECTRIC / HYDROGEN

VEHICLES. (Hydrogen vehicles require enormous amounts of ELECTRICITY to produce the hydrogen they burn cleanly. Thus, CLEAN ENERGY for these vehicles is vital to making them part of an environmental solution. The Bush Administration seriously misunderstands this point.)

Society tends to give undue weight to "up-front" costs. But in reality, **ALL** costs of any chosen (or discarded) technology must be applied to ANY decision regarding using (or continuing to use) that technology. Nuclear power has been -- and continues to be through such things as the Price-Anderson Act -- highly subsidized by the federal government from day one. But ratepayers have never received one kilowatt of cheap electricity from nuclear power, taxpayers have paid through the nose, and those who have been or will be harmed by radiation will never receive any compensation. To whatever extent nuclear power is cheap (which it's not), these are the reasons why.

5) Nuclear Power is safe energy

If it's so safe, why did Osama consider attacking it on 9-11? Why did San Onofre claim to have doubled the number of armed guards it maintains on the premises at all times after 9-11? They will NOT say how many they actually use, but concerned EXPERTS have determined that the previous number was almost surely not more than FOUR. Have they DOUBLED THAT? Would 50 armed guards be able to stop a PRIVATE PLANE FROM OCEANSIDE AIRPORT, filled with explosives, from crashing into the facility? Not a chance.

But what about natural disasters? Isn't San Onofre safely protected against those? Again, no. For tsunamis, there is a 30 foot sea wall (variously reported in the media to be a 35 foot sea wall). In the December 26th, 2004 tsunami disaster, waves of **SIXTY FEET** were reliably reported in MANY LOCATIONS! Similarly, San Onofre claims to be protected against a 7.0 earthquake. But it's **anyone's guess** as to whether it really is -- or whether that's good enough. What **IS** well-known is that after major earthquakes in California over the past few decades, **numerous buildings collapsed which were expected to survive the forces they are believed to have encountered -- many of these buildings were built long after San Onofre.** Asteroid protection? No, that's ***NOT*** what the domes are for! Those huge concrete domes are only a few feet thick on the top! And the spent fuel pools and dry cask storage systems are also not adequately protected against natural disasters. San Onofre officials have said that the dry casks are designed to withstand being submerged in 50 feet of water. This is untested, and -- since 60 foot waves (or larger!) should be expected in the area sooner or later -- utterly inadequate!

A meltdown at an operating nuclear power plant can happen in a matter of seconds. A terrorist attack can be over before any outside forces have had any chance to grab their weapons, let alone head for the facility. The meager private security forces at the plant can be overrun by any well-trained, suicidal band of terrorists because they will bring with them overwhelming firepower such as grenades, poison gas, laser weapons, etc. etc. etc.. Experts have concluded that no adequate protection can be built cost-effectively. "Too cheap to meter" is really "too expensive to protect" and we ought to just shut them down for this reason alone.

6) Radiation in low doses is harmless

Harmless? Not at all! Numerous studies have shown that there are "standard" ways that radiation harms the body, such as the "bystander effect" (kills adjacent cells), the creation of "free radicals," and direct DNA damage. These cause various kinds of cancer, a weeping heap of forms of genetic damage, some of the most common types of heart failure, some forms of dementia, most leukemias, and many other ailments.

Take **tritium**, for example, or what they call "tritiated water." Tritium is radioactive hydrogen, of which a tiny fraction occurs naturally. But around a nuclear power plant, thousands of Curies of tritium are released each year. Its half-life is about 12 years. Even though tritium decays with very low energy, each radioactive decay can destroy 20,000 chemical bonds in your body. 20,000 "free radicals" can be created, or 20,000 DNA strands can be broken, or 20,000 holes in your cell's walls can be created. You have trillions of cells, with millions of chemical bonds in each cell. So what if 20,000 are damaged by one little radioactive decay of tritium, you might ask. Dr. Caldicott put it this way recently: "It takes a single mutation in a single gene in a single cell to kill you." And, it's not just one radioactive decay. EACH ACCIDENT THE NUCLEAR INDUSTRY HAS POISONS **YOU.** For example, many people have tried to estimate the burden we each carry (in the Northern Hemisphere) from the radioactive contents on board NASA's SNAP 9A rocket in the 1960s. SNAP 9A fell to earth, releasing 2.1 pounds of plutonium (about 17,000 Curies) into the environment. **NASA had estimated the chance of failure at one in ten million.** Pro-nukers have calculated that the average male adult pisses out ONE MILLION ATOMS OF PLUTONIUM PER DAY from that ONE accident. Their "proof" that this is harmless is that we have not all died of testicular cancer! And, they say, a small amount of radiation may even be GOOD FOR YOU!

With logic like that extended to the everyday world, pregnant women would be required to smoke cigarettes and drink several shots of whiskey every morning. And lead plumbing would come back in style, which some say led to the fall of the Roman Empire, as stupidity set in from the piped-in water system. A marvel of engineering, and seemingly so environmentally friendly! But it had a hidden flaw. Nuclear power's flaws are not so well hidden! Instead, the nuclear industry spends MILLIONS OF DOLLARS EACH YEAR covering up their mistakes. How many people reading this have ever heard of DAVIS-BESSE in Ohio? In 2002, it came closer to a MELTDOWN than Three Mile Island did in 1979, which most people have, presumably, heard of. **THE INDUSTRY HAS COVERED UP THE DAVIS-BESSE DEBACLE, including the fact that it resulted in the largest fine (over $5,000,000) the NRC has ever handed out (it's being appealed).**

7) Coal is the only alternative, or some other fossil fuel

First of all, why WOULD anyone choose coal over solar, wind, tide, wave, hydro, or geothermal? Or space-based mirrors for added evening light in major cities? Coal, like oil, is a wonderful substance which should be processed, not simply burned! Second of all, if you believe the hype the Bush Administration is offering about "Clean Coal Technology", then what's the worry?

8) Nuclear power is a proven technology

Yeah, proven **FAULTY!** This is an industry which has had to send **memos** around the country reminding themselves not to leave **TAGS** on their control room indicators and switches which **overlay** other important switches, gauges, dials, etc.! In other words, this has been a *recurrent problem at U.S. nuclear power plants.* It was considered a factor in the Three Mile Island accident, and has NEVER been completely resolved, along with 100s of other control-room problems such as stress-related mistakes, or medical drug-induced confusions. For example, a common class of heart medication, known collectively as "beta blockers" (no connection to "beta particles" which are released by nuclear power plants), is itself known to cause heart failures, as well as hallucinations, mood swings, and depression. Yet this author has not been able to find a single study of the use of "beta blockers" among nuclear power control room staff who, because of their age (especially senior management) and low physical-exertion jobs, are among the population most likely to be using these medications.

For several years at **Davis-Besse** in Ohio, WARNING SIGNS had appeared that there was a rust problem. Air filters would clog with RADIOACTIVE RUST PARTICLES so often that the filters -- which are supposed to be changed every three months -- were being changed DAILY. The NRC was not regulating carefully enough to notice, and the plant operators who had to order and replace and dispose of all those filters didn't notice, and the filter-supply company didn't notice -- NOBODY noticed the **hole in the REACTOR PRESSURE VESSEL (RPV)** that was forming. But by chance, a worker leaned against a CONTROL ROD HOUSING above the RPV during an outage, and it FELL OVER AGAINST THE NEXT CONTROL ROD HOUSING. This led to a more careful inspection which led to the discovery of a HOLE which was created by a LEAK of the HIGHLY CAUSTIC PRIMARY COOLANT from pipes above the reactor itself. At least one more control rod housing was similarly wobbly from a second leak and a second rust spot. The larger hole went all the way through the RPV and the ONLY thing holding back the 2,200 PSI Primary Coolant inside the reactor was a 1/8th inch (some say 3/16ths) STAINLESS STEEL LINER whose sole purpose in the reactor was to PROTECT the RPV from the CAUSTIC CHEMICAL BROTH on the inside -- it was not designed to serve any pressure-containment purpose at all -- and it was bulging from the strain! This was more nearly a serious meltdown than **Three Mile Island** was, in many ways. But it happened in 2002 and nobody noticed, nobody was told.

Then there was Monticello. In 2001 at Monticello, an old Boiling Water Reactor (BWR) in the midwest, they discovered that ever since the plant had opened in 1970, the Emergency Core Cooling System (ECCS) would NOT HAVE BEEN AVAILABLE if needed. Why not? Shipping bolts -- 32 of them, to be removed at installation time -- had been LEFT ON the "bellows" that would have let the ECCS water circulate around the reactor! Obviously, these parts were never inspected, never tested, and fortunately, never needed. In fact, no ECCS in America has ever been needed, and many of them are HIGHLY SUSPECT as to whether they would work at all!

The only thing "proven" about nuclear power is that sooner or later, if we do not shut down the plants FOR GOOD, there WILL BE A MELTDOWN. That is a proven, statistically INEVITABLE fact. BWR, PWR, PBMR, it doesn't matter. They can all burn up, melt down, be vaporized in a terrorist's nuclear bomb attack, etc. etc. etc.. **Ask yourself this: If the people trying to promote the NEXT GENERATION of nukes are so sure they are so much safer**

than the CURRENT GENERATION as to make nuclear power "good" again, then WHY aren't these same people calling for shutting down the current generation and making do with less energy (or adding more peak power capacity elsewhere for a few years), and concentrating their money (instead of ours) on the new technology instead of throwing more money (OUR MONEY) down the nuclear rat-hole that today's plants are, and making US throw OUR money towards these new generations of nukes?

They refuse to educate themselves about the dangers, the side effects, the downside, the real costs, the potential catastrophic loss of life that could occur because we have places like San Onofre in our midst.

9) Renewable energy isn't ready

Yes it is, and it has been for decades. Sure, there will be some stumbling along the way if we try to build the "farthest out" ideas in the first steps. We will probably need to replace our renewable technology as better, more efficient, more renewable technology comes along. And guess what? Renewables have a big advantage there, too, because unlike USED NUCLEAR MACHINERY, renewable energy systems are, themselves, recyclable. But everything at a nuclear power plant is RADIOACTIVE. The only way the government or industry can reuse any of it is by ALLOWING DEADLY POISONS INTO YOUR HOME which, by the way, there is an enormous move to do -- recycling what they call "slightly" radioactive metals into children's braces, for instance (I KID YOU NOT).

Let's take a look at those "old" steam generators they want to "replace" at San Onofre -- the ones that were SUPPOSED to last the entire life of the plants (that's why they have to cut a hole in the supposedly impenetrable containment dome to replace them). The old ones might very well end up sitting on the grounds of the facility, letting off their radioactive "shine." They are considered too "hot" for anywhere but one possible waste facility in the whole country, and that one place (in Utah) might also not be able to accept them, so the plans currently call for semi-permanent storage on site.

10) Renewable energy, even if it's ready, can't replace all that many other sources, it can only do a little bit

Not true. In just one location (the Tehachapi Pass) California PLANS to build more than enough wind power capacity to replace all four nuclear power plants in the state. Renewable energy WILL dot the landscape, if it's applied properly. We just have to APPLY IT properly. Some birds will die from collisions with windmill blades, just as they now die from collisions with cars, trucks, and airplanes. Whales die from collisions with submarines (it's called "hitting a cow" in the nuclear navy). Jobs will change and who makes money will change. With San Onofre operating, Southern California Edison (the operator and primary owner) makes millions of dollars every day, while deadly "spent fuel" nuclear waste piles up for our children to take care of, and while we risk ruining Southern California for thousands of years.

For 50 years, we have been told that a solution to the problem of nuclear waste was coming. But NOBODY -- not Edward Teller, nor Glenn Seaborg, nor anyone else in the pro-nuclear camp, or in any camp, has EVER come up with ANYTHING that even REMOTELY BEGINS TO SOLVE THE PROBLEM! Cost-effectively.

Sure, we can build, for about TWO BILLION dollars, **ANOTHER** sarcophagus around CHERNOBYL. And then ANOTHER. And then ANOTHER. And each will cost BILLIONS MORE than the previous one. And each will crumble from the INTENSE RADIATION WITHIN THE PLANT.

Sure, we can take the **SPENT REACTOR CORES FROM SAN ONOFRE** and dump them in a leaky tunnel in an earthquake-prone section of NEVADA -- **if they'll let us**. But that doesn't mean we've safely disposed of them. And we can't be sure we can get them there safely. And we can't do any of that without OSAMA seeing one of the thousands of trips. At least **5,000 trips from California reactor sites alone** will be needed to remove the CURRENT WASTE PILES. The more waste we make, the more trips we'll need. OSAMA ONLY NEEDS TO FIND ONE OF THEM.

Did I mention the DOE proposed vehicle for these trips has about 92 wheels and something like 20 axles? It has to; the shipments are enormous, even with 5,000 of them to go. Osama will have little trouble picking out the target.

11) It's too expensive to switch now

It only gets more expensive. As non-renewable resources are depleted, the cost of switching increases because the cost of doing business increases for EVERYBODY. Uranium, by the way, is a non-renewable resource!

12) People studied this in the past and decided it was ok

Yeah, we've heard lots of things are okay that, in retrospect, we should have known better about. Few people would ride a bike or ski without a helmet nowadays, but when nuclear power was approved, only racers wore helmets. Cigarettes, of course, were not considered dangerous by most people when nuclear power came along. X-rays were considered so harmless, children's feet were routinely x-rayed to see if their shoes fit! Many of these children suffered horrible cancers, along with the shoe salesmen, whose hands would be irradiated during the procedure. People have made mistakes in the past; **nuclear power is undoubtedly one of them.**

13) People want nuclear power

People don't like being told they'll freeze in the dark. People know they need electricity to survive and enjoy life. Furthermore, they are not told about Davis-Besse, or Monticello, or that Osama was considering targeting nuclear power facilities, or that the real reason we have nuclear

power was that we "needed" the power plants to produce plutonium for nuclear bombs (San Onofre produces several hundred POUNDS of bomb-grade plutonium EACH YEAR).

14) It's anti-technology to be against nuclear power

No, the opposite is true. Nuclear power is 50 years old and the so-called "new" designs (like Pebble Bed Modular Reactors) are actually just old designs redesigned using one or two new features -- like, NO CONTAINMENT DOME. There are lots of exciting, innovative technologies for renewable energy. By 2020, with or without the Steam Generator Replacement Project, renewable energy in California is expected to produce at least double to triple the total power output of San Onofre AND Diablo Canyon COMBINED. So we actually ARE replacing San Onofre's power several times over. Yet we are told, year after year, that we cannot!

15) Only ignorant people oppose nuclear power

Not true again. There are hundreds of books by highly meticulous researchers and scientists which discuss the many dangers of nuclear power. This author has collected over 500 books about nuclear power (see URLs at the end of this document for a list of many of them). Only a relatively small handful of books have actually been WRITTEN in SUPPORT of nuclear power -- the author has many of them in his collection, books by Teller, Seaborg, Cohen, and other pro-nukers.

It's certainly true that a lot of ignorant people oppose nuclear power. A lot of ignorant people also support it.

People are demanding a stop to the creation of ever-increasing piles of radioactive waste NOT because they are ignorant but because they are EDUCATED ABOUT THE DANGERS AND HAVE LEARNED TO SAY 'NO'!

16) Scientists supports nuclear power

Scientists are more easily bought than most people would believe. Scientists are more easily fooled than most people would believe. Science has yet to come up with a cost-effective, safe solution to the problem of radioactive waste. Despite spending 30 billion dollars on the problem over 50 years, they are still at a virtual standstill. Yucca Mountain isn't much of "scientific" solution anyway, even if it gets built -- a big hole in the ground! That's not what we were promised when Americans decided, in the 1950s and 1960s, to build a few nuclear power sites. The industry always wanted -- **and still wants** -- THOUSANDS of nuclear reactors. We have 103, which is 103 too many.

17) The media supports nuclear power

There are a lot of members of the media who should be ashamed of themselves for not investigating nuclear power thoroughly enough to understand its dangers. Too many members of the media are NOT AWARE, for example that the "spent fuel pools" and "dry casks" are OUTSIDE THE CONTAINMENT DOMES. Or even that there are MANY vital parts outside those domes, such as emergency power generators, control rooms, pumps, and emergency core cooling system water supplies. But OSAMA knows! The California state government would have you believe that the SPENT FUEL POOLS at San Onofre are safe from AIRPLANE STRIKES because they are located BETWEEN THE TWO DOMES. **Media need not take such foolish assurances to mean anything but that the person claiming the spent fuel pools are safe from airplane strikes is either lying, crazy, or both.** An East-to-West or West-to-East approach, or a dive straight down into the facility, is all it would take. And baby, can you maneuver a 747 if you don't mind making the passengers' stomachs queezy! You can flip it over on its back and dive it straight in. Even if the wings peel off it won't matter much if you choose the right angle of approach. Don't believe me? Buy a flight simulator and try it. We all know the terrorists can fly planes. They just don't know how to land them.

18) The military supports nuclear power

It has to. It needs a retirement program for all those people it trains to operate the military reactors, who are expecting high-paying, respectable jobs when they get out of the service. Furthermore, the only way they can claim their reactors are not spewing dangerous radiation into our environment, and creating massive quantities of radioactive waste we can't do anything with safely, is by claiming the commercial power reactors are also safe, and that low-level radiation is harmless.

But in reality, nuclear power is **NO BETTER** for military use than for civilian use. The U.S. Government's own General Accounting Office, WITHOUT TAKING INTO ACCOUNT ACCIDENTS, DAILY RELEASES, OR THE PROBLEM OF DISPOSING OF THE RADIOACTIVE SPENT FUEL WASTE, ***still*** concluded that there is **no advantage** to nuclear aircraft carriers from a purely cost/benefit point of view. After all, it's the depleted-uranium-spewing planes that do the fighting, not the carriers, which only launch the planes and retrieve them. It's the depleted-uranium-tipped Tomahawk missiles that destroy targets, not the cruisers which launch them. And the submarines don't really need to run silently for that long -- it's all hype. When they really want to run silent, they have to shut the reactor down and run on batteries, anyway! Besides, the Cold War's over, remember?

19) The government supports nuclear power

The Department of Energy and the Nuclear Regulatory Commission were created because the Atomic Energy Commission was too biased. After Three Mile Island, the job of regulating nuclear power was divested from the job of promoting it. But the NRC never divested itself of supporting nuclear power at any cost. If you try to ask an NRC official why they do not support

a switch to renewables, they will NOT tell you all about the inefficiencies of wind power, etc. etc.. Instead, they will simply tell you that is NOT THEIR JOB - that you should go to the DOE to talk about alternatives. They only make sure the plants run safely, they say. But if you go to a toadie at the DOE, they'll tell you that as long as the NRC says nukes are safe, they don't have a problem with them and WON'T INVESTIGATE the advantages of switching to renewable energy instead. Try it yourself: That's the kind of run-around you'll get.

20) Nuclear power was democratically chosen by the people

That's just simply not true. People were told we needed the plants for electricity production when really they were for making plutonium -- THAT's how it all got started! We've been told every excuse under the sun (literally) except the right one. We've been told we need it or our lights will go out -- NOT TRUE. We've been told it's cheap -- NOT TRUE. We've even been told it will release us from the grip of foreign cartels, but that's NOT TRUE either! And what is the REAL reason we keep using nuclear power, even though none of the reasons we've been given are accurate? IT'S BECAUSE NUCLEAR POWER PLANTS MAKE BILLIONS OF DOLLARS FOR THEIR OPERATORS -- AT THE COST OF YOUR LIFE! That's the reason we have nuclear power in America. Because the owners love to make money and the military needs both the byproducts of nuclear power (Plutonium and Uranium for atomic bombs) and a "civilian" reactor program to create public support for the military reactor and nuclear bomb programs. And not to mention the Uranium munitions program, another waste product of the nuclear reactor program which is finding its way into our environment at an ever-increasing rate.

21) More people have died in Ted Kennedy's car than from nuclear power

That's the claim of a popular pro-nuclear bumper sticker, but it isn't true. Three Mile Island alone released so much radioactivity that cancer clusters around the plant have existed ever since. A few biased studies which suggest otherwise are widely promoted, but the reality is: That area is highly polluted. And Chernobyl killed tens of thousands of people, maybe hundreds of thousands.

22) Leading "anti-nuclear" scientists and researchers have been discredited

Oh, you mean Dr. John W. Gofman? No, he hasn't. His role in the Manhattan Project, his eminent stature in the medical field as well as in nuclear physics, has not been diminished by anyone. Or do you mean Dr. Helen Caldicott, Nobel Peace Prize Nominee and founder of Physicians for Social Responsibility and other organizations? No, she hasn't been discredited, either. Or perhaps you are thinking of Dr. Alice Stewart, who discovered the connection between prenatal x-rays and childhood cancers? No, her soul rests untarnished. Or do you mean Dr. Ernest Sternglass, whose inventions are still used by NASA on every space launch? Or

perhaps you mean author and videographer Karl Grossman? Wrong again -- his meticulous footnoting of his books may bore the average reader to tears, but it's accurate.

23) The "anti-nuclear" activists are a bunch of whackos

There are "whackos" everywhere, in every group. Recently, one of the most important anti-nuclear activist organizations -- Global Network -- was found to be INFILTRATED by the local police force (in Florida), acting as spies for NASA and the Pentagon. When you see an activist you think is "whacko" remember they might just be putting on a show for you to see. Get out and get the facts for yourself. The anti-nuclear organizations have some very qualified, very talented, very rational, and very respected scientists who lead and support them and advise the true activists.

24) We're all going to die somehow anyway

That's a fact. But we each have a right to determine FOR OURSELVES what risks we want to take. And society should generally be VERY WARY of "solutions" which require each of us to take on an added risk, however small, for hundreds or even thousands of generations and globally. Billions of CURIES of radioactive waste have been released into the environment already because of nuclear power, which has contributed, along with nuclear weapons testing, to global increases in thyroid cancer, leukemia, and other ailments typical of an environment irradiated with POISON GAS MADE OF RADIOACTIVE INHALABLE AND INGESTIBLE PARTICLES.

25) But we've ALWAYS done it like this!

No we haven't. Nuclear power was once the "new kid on the block" and everybody was thrilled by the idea that we would have electrical energy that was **"too cheap to meter."** Although it was later learned that it would be expensive electricity prone to outages and other problems, we are STILL being told that it is cheap energy! It isn't, it never was, it never will be.

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