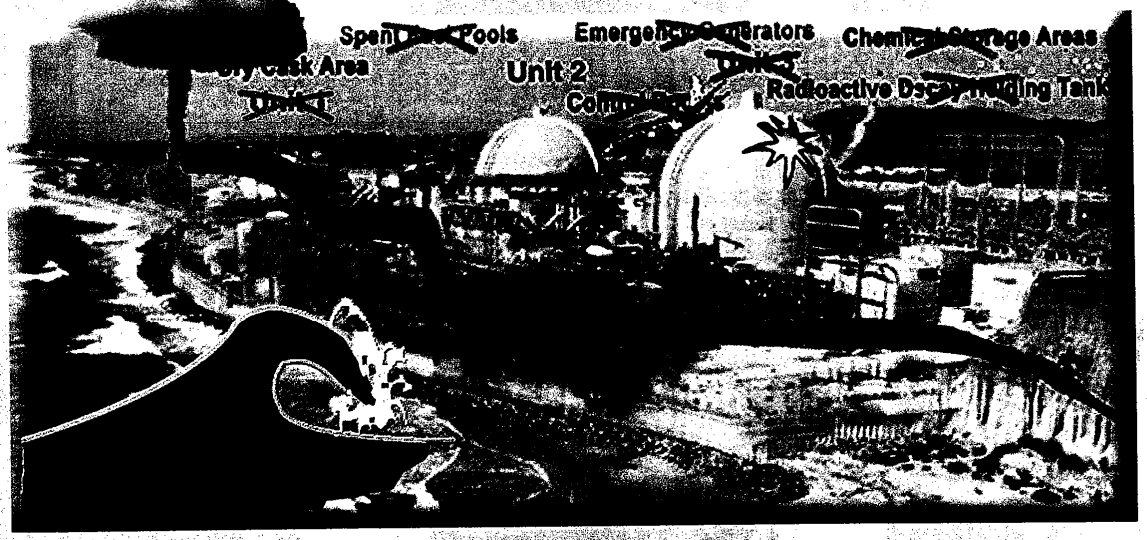
Comment Set 16, cont.
Russell D. Hoffman

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 20041010008 (A.04-02-026)

Comment Set 16, cont.
Russell D. Hoffman

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.). 16-7

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.

Comment Set 16, cont.
Russell D. Hoffman

The Nuclear Mafia Lies to You

16-7

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."

NIRS
1424 16th Street NW Suite 404
Washington, DC 20036
Tel. 202 328 0002

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.)

Comment Set 16, cont.
Russell D. Hoffman

"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)

16-7

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 X 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.)

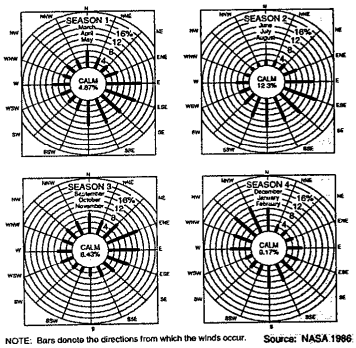
Unit II and Unit III's reactors were designed by Combustion Engineering.
The new steam generators, if permitted, will be built by Mitsubishi in Japan.

Comment Set 16, cont.
Russell D. Hoffman

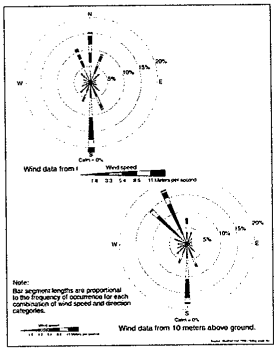
Wind Roses and Deadly Plumes

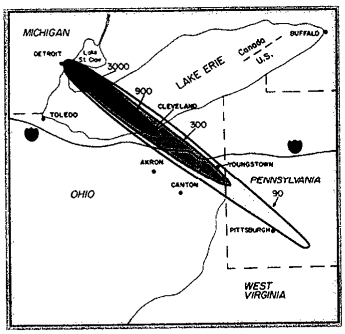
16-7

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.



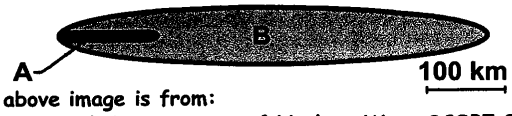
NOTE: Bars denote the directions from which the winds occur. Source: NASA 1986





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.

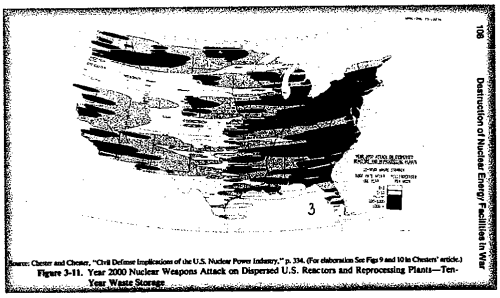
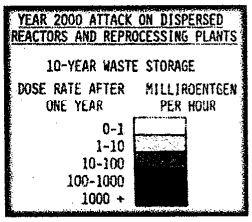


Figure 3-11. Year 2000 Nuclear Weapons Attack on Dispersed U.S. Reactors and Reprocessing Plants—Ten-Year Waste Storage

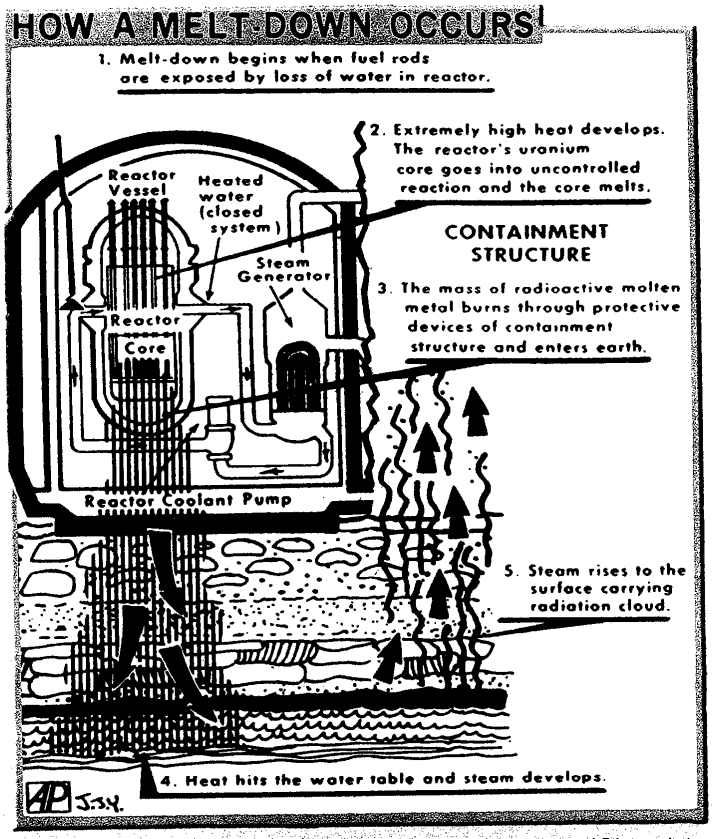
The book warned of the extreme danger America faces because of its nuclear power plants and other nuclear facilities, which are targets for terrorism. The key from the map shown on the left is enlarged on the right.



Comment Set 16, cont.
Russell D. Hoffman

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

16-7



AP Laserphoto

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

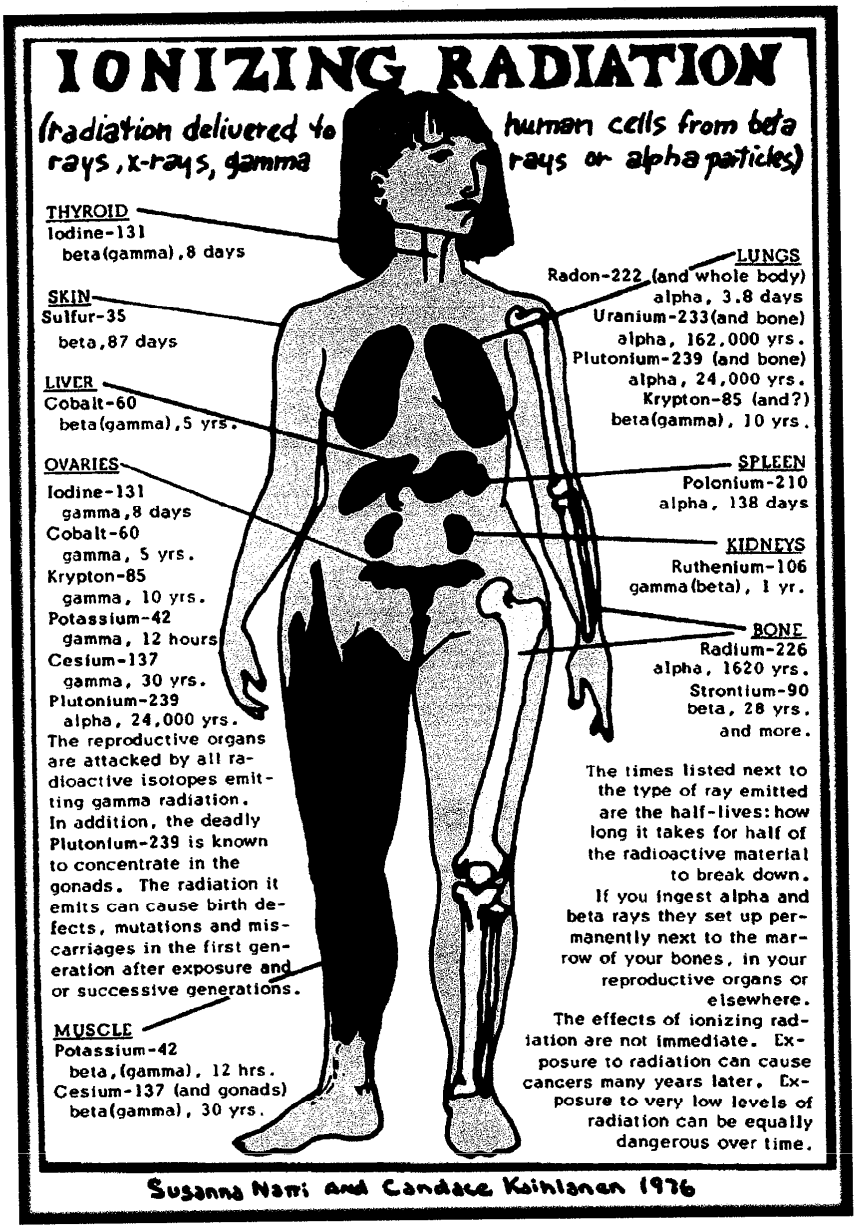
CRAC-2 est. casualties and costs for San Onofre
(Note: CRAC-2 values are U.S. Government 1982 figures which minimize the potential damage in a number of ways.)

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

Comment Set 16, cont.
Russell D. Hoffman

16-7



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"

Comment Set 16, cont.
Russell D. Hoffman

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

16-7

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!

Comment Set 16, cont.
Russell D. Hoffman

1) We need San Onofre's electrical output

16-7

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.

Comment Set 16, cont.
Russell D. Hoffman

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. 16-7

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

Comment Set 16, cont.
Russell D. Hoffman

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.)

16-7

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.

Comment Set 16, cont.
Russell D. Hoffman

6) Radiation in low doses is harmless

16-7

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?

Comment Set 16, cont.
Russell D. Hoffman

8) Nuclear power is a proven technology

16-7

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**

Comment Set 16, cont.
Russell D. Hoffman

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?

16-7

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.

Comment Set 16, cont.
Russell D. Hoffman

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. 16-7

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

Comment Set 16, cont.
Russell D. Hoffman

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).

16-7

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.

Comment Set 16, cont.
Russell D. Hoffman

17) The media supports nuclear power

16-7

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

Comment Set 16, cont.
Russell D. Hoffman

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. 16-7

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

Comment Set 16, cont.
Russell D. Hoffman

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.

16-7

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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Comment Set 16, cont.
Russell D. Hoffman

San Onofre Incidents, Accidents, and News

2001-current (May, 2005; vers. 5d)

16-7

Below is a list I have compiled of problems that have occurred at San Onofre over the past few years, with some related data. Despite anything some ivory-tower dreamer might claim, or anything some pro-nuker who has made a living off of other people's misery might say, nuclear power IS a crime against humanity -- nothing less.

The spent fuel at San Onofre is pushing -- or perhaps has already passed -- 4,000,000 pounds. One gram of that would be enough for a dandy "dirty bomb". Around the country, there are 80,000 tons of used reactors cores, with NO PLACE TO PUT THEM. Yucca Mountain is a boondoggle, sharply opposed by people in Nevada and along the transportation routes. This high level radioactive waste is EXTREMELY deadly, can catch fire spontaneously, and is kept OUTSIDE the containment domes at each reactor. If there is an accident, act of nature, or terrorist attack, it will cost society trillions of dollars and tens of thousands, if not hundreds of thousands, of lives.

Every part of San Onofre is aging rapidly. There is no reason to believe SCE's estimate that the steam generator upgrade will save $1 billion dollars for their customers. I'm sure there are enormous accounting tricks to come up with any such figure and it is utter garbage. They won't show us the figures, of course, just their summation. In reality, SCE simply wants to keep the nuclear facility open at ANY cost, in the expectation that future generations of nuclear reactors will be more profitable for them -- in other words, to simply keep the SITE LICENSES GOING because Geo. Bush & Company has promised BILLIONS AND BILLIONS to restart America's nuclear program -- and SCE wants a BIG piece of that pie!

Every day we keep the facility open and refuse to switch to renewable energy solutions we are incurring an additional debt to society which future generations will curse us for. Steam generator leaks send poisonous "primary coolant" at 2200 PSI into the secondary coolant loop which is at a much lower pressure (about 900 PSI). From there, the radiation is released in dribs and drabs directly into the environment, as that coolant loop's chemical broth is changed over time. So this isn't just a matter of money or politics -- nuclear power releases deadly radiation all day, every day.

Russell Hoffman
Concerned Citizen
Carlsbad, CA

Comment Set 16, cont.
Russell D. Hoffman

SCE is the second-largest investor-owned electric utility, a subsidiary of Edison International.

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According to the IAEA, the "Annual Time On Line" for Unit 2 was:

2000: 89%
2001: 97.47%
2002: 86.96%
2003: 98.98%
2004: 82.68%

Since beginning operation in **1982**, Unit 2 has had 7 years with below **70%** ATOL (through **2004**, and not including **1982**), and 2 more years with identical **70.74%** ATOLs.

The ATOL for Unit 3 during the same period was:

2000: 100%
2001: 59.02%
2002: 98.84%
2003: 88.37%
2004: 72.22%

Since beginning operation in **1983**, Unit 3 has had three years below **60%** ATOL (including **1984** and **1985**, the first two years of what was supposed to be full operation), **4** below **70%**, and **10** years below **80%**.

February 3rd, 2001:

Just **12 hours** after going back "into service" after repairs, Unit 3 was shut down because of "a fire in an electrical switching room." A 20-year-old circuit breaker "failed to close, creating a 4000-volt arc and fire that cut power to coolant control systems, drowned emergency switching valves and shut down emergency oil pumps, destroying the [turbine] shaft. Currently, 150 identical breakers remain in service at the plant."

Here's the lead paragraph from an "early" SD U-T report. At this point one assumes they hadn't yet realized the turbine shaft was bent, so their estimate of the repair time is wildly optimistic:

February 6th, 2001:

"A small fire last weekend that triggered the shutdown of one of two reactors at the nuclear power plant in San Onofre will keep the reactor shut down for several weeks, a plant spokesman said."

This was no "small fire' and required professional help from the San Clemente Fire Department to put out (there was **an argument** about how to put it out, and the SCFD finally won).

Comment Set 16, cont.
Russell D. Hoffman

There's a special name for a turbine shaft that runs off it's clamps and bearings and whatnot that's holding it, and gallops across the land, sort of like a steamroller gone mad. That almost happened at San Onofre. I believe one of the turbines would roll towards the control room area, and the other would head towards the puny little tsunami wall. but I'm not sure which turns which way. 16-7

May 30th, 2001:

Ray Golden, spokesperson for San Onofre Nuclear ***WASTE*** Generating Station, accuses the opposition of being "completely misinformed and they don't understand the laws of physics." That very day, San Onofre drops an **80,000 lb** load (a crane) when a strap breaks. This leads to a reported **$5,000,000** expense in lift training, strap replacement, etc. etc.. The same month the crane incident is reported (**June, 2001**), the EPA approves a power up-rate for San Onofre Units 2 and 3.

June 6th, 2001:

Workers overfill a **300 gallon** steel bin with **hydrazine**, a toxic chemical used to purify water in the plant's cooling systems, spilling about **20 gallons** (SD U-T).

June 26th, 2001:

Flames and smoke shoot suddenly skyward, pieces of silvery material were fluttering through the air and drifting toward the freeway. Glass falls on the nearby railroad tracks and on the freeway. When the fireball occurred, traffic began speeding up. "Everybody sort of saw it and thought, 'Oh my God, have we just been irradiated or what?' " (SD U-T)

In fact, the explosion was a transformer in the switchyard, which is also old and poorly maintained, just like the rest of the plant. it was one of **54** similar "potential transformers" which "step down" the voltage to 115 for "sampling." Electricity normally goes out the transmission lines which cross I-5 (and thus are targets for terrorists!) at **238,000 volts.**

In **1994** the same thing happened. "Plant workers discovered that corrosion caused by ocean air rusted the transformer's carbon-steel casing, allowing water to enter and contaminate the insulation oil." After the **1994** incident, inspections led to 4 transformers being replaced, and 3 being repaired.

September 11th, 2001:

San Onofre and the nation's **101** other nuclear power plants are NOT shut down during the attack that day, despite planes on the loose being smashed into multiple buildings.

Comment Set 16, cont.
Russell D. Hoffman

September 26th, 2001:

On the front page of the NC Times, Ray Golden, spokesperson for San Onofre Nuclear (Waste) Generating Station, says he, "had always been taught that we were designed specifically for large plane crashes...That was incorrect." In another paper, he is reported to have said, "The plant was never designed for the impact from a commercial airplane."

16-7

September 26th, 2001:

Breck Henderson of the NRC is quoted saying activists aren't facing reality. He claims the plants are safe against tsunamis, earthquakes, tornados and "other natural or man-made disasters" (NC Times).

Letter to NC Times following shutdown **October 2001** "for repairs:"

October 13th, 2001

Subject: San Onofre nuclear reactor, Unit II, shut down for approx. 20 days for repairs; x-rays should be done for circular cracks in the reactor vessel

To The Editor:

Yesterday it was reported that San Onofre Nuclear (Waste) Generating Station's Unit II reactor has been shut down for repairs lasting about three weeks.

Last August, San Onofre's operators, Southern California Edison, refused to shut their two operational reactors down in order to do x-rays of their reactor vessels for circular cracks around the approximately 100 nozzles which enter each vessel, choosing to wait, instead, until the regular repair schedule dictated a shutdown. Circular cracks have been identified as a potentially catastrophic, inherent design flaw in Pressurized Water Reactors. The problem has been found in French and Japanese PWRs, and last spring, in PWRs in two out of three reactors on the Oconee (South Carolina) generating station.

San Onofre's reactors are about 20% larger than the Oconee reactors (more heat, more liquid, more vibration, etc.).

I have previously described the circular cracking problem in detail in several essays and letters to the editor which I posted online here:
http://www.animatedsoftware.com/environm/onofre/nct2001h.htm

Now that the reactor is shut anyway, is San Onofre doing the x-rays? My guess is no, because I believe if they were, it would have been reported.

Comment Set 16, cont.
Russell D. Hoffman

The decision not to shut the reaetors down in August for an x-ray inspection was yet another flagrant violation of the spirit of safety which they claim to have at San Onofre. To not shut them down following the September 11th attacks is even crazier. 16-7

But in any event, if they don't x-ray the welds on the Unit II reactor vessel while the reactor is shut down right now anyway, it's definitely nothing less than criminal negligence.

Sincerely,

Russell D. Hoffman
Concerned Citizen
Carlsbad, CA

October 24th, 2001:

"...mock attack teams staged four assaults on the plant, and three were repelled. During the final drill, the attackers were closing in on a target when the exercise was suddenly called off. It is far from certain that plant managers have taken the necessary steps to ensure that a real attack would be less successful" (SD U-T).

Christmas Day, 2001:

A Cessna 172 crashes into the ocean just south of San Onofre Nuclear Generating Station. First reported to have crashed 3 miles south of the reactor and 1/2 mile out to sea, in fact it was probably **less than 1/4 mile away**.

January 8th, 2002:

San Juan Capistrano (CA) police arrest a man who had threatened **to shoot up the San Onofre Nuclear Power Station and his former coworkers** at the plant.

He had an arsenal of almost **300 weapons**, including **illegal assault rifles, 5,000 rounds of ammunition, an antitank rocket launcher, four live hand grenades, tear gas, survivalist material**, etc. etc..

Comment Set 16, cont.
Russell D. Hoffman

February 27th, 2002:

Unit 3 goes offline after a backup connection trips. One of the main electrical connections had been out of service for a week for "maintenance and repairs to key equipment" when the backup tripped. To prevent an uncontrollable blackout in the San Diego area, power was cut to over **200,000 SDG&E customers**. 16-7

June 21st – 27th, 2002:

"Five families of San Onofre workers who have died of rare forms of cancer have sued SCE for failing to disclose radiation leaks at the plant." About this time, the U.S. Government begins distributing Iodine (KI) pills within a pitiful **10-mile** radius around the plant (OC Weekly).

July 4th, 2002:

Unit 2 is returned to service, concluding a 43-day "routine" shutdown for "refueling and maintenance." Operators had intended to start several days earlier, but a malfunction of steam bypass valves automatically shut the reactor down shortly after operators had started it. During the outage, workers repaired **170 tubes** and plugged an additional **150** - "fewer than they expected." Edison had hired **1,400 contract workers** to supplement the **1,800 regular workers** at the plant (SD U-T).

September 27th, 2002:

It's reported in World Net Daily that an airplane flying a standard route (known as "Victor 23") can fly DIRECTLY over San Onofre at about **17,000 feet**. Jets on "V23" could descend at well over **5,000 feet per minute** in a "quick but normal descent" -- much faster if deliberately sent into a nosedive. Every jet departing San Diego on V23 is, in fact, heading for San Onofre.

V25 also runs very close, about 15 miles offshore. A jet traveling at **600 miles per hour** covers **15 miles** in less than **two minutes**.

February, 2003:

Plans to haul away Unit 1's **900-ton** reactor pressure vessel ("as heavy as two fully loaded Boeing 747s," as one article put it) get so close that a **192-wheel tractor-trailer** is expected to haul it away to a barge, which would then transport the reactor about 20,000 miles, including around Cape Horn, to Barnwell County, South Carolina. Cape Horn, the most deadly passage on Earth, is referred to as "the tip of South America" in one AP report, rather than being named explicitly. Rail shipment and the Panama Canal had both already been eliminated, the former because it would "disrupt regular shipping" and the latter because PC officials found it PC to "not accept" the cargo. They apparently have a "150 ton limit on radioactive cargo," perhaps not

Comment Set 16, cont.
Russell D. Hoffman

understanding that it's Curie content that matters, not raw weight. In this case, both (the utility says it's equal to one dental x-ray per hour if you are right next to it). Travelling the long way around the globe has still not been ruled out as yet another alternative, but leaving it sitting on the beach seems to be the actual plan. 16-7

May, 2003:

Don May, the president of California Earth Corp, points out that there is a major fault line about two miles away from San Onofre that is "overdue for an earthquake." Mark Massara of the Sierra Club's coastal program describes San Onofre as: "an unequivocal environmental and economic disaster with no redeeming features whatsoever." It's reported in local media that several former employees of the plant who have developed cancer have sued plant owner Southern California Edison and its suppliers (such as Bechtel) for exposure to radiation.

September 26th - October 2nd, 2003:

San Onofre Nuclear Generating Station ranked **THIRD** among the U.S. facilities "most likely to suffer a meltdown" according to the Union of Concerned Scientists. The risk is in part due to design defects in the sump pump system, according to the group. There is potential for debris to clog the screen on the containment-vessel sump. Such a clog could prevent water from being pumped through the reactor core, causing the reactor's fuel rods to overheat and melt down. On **August 1st, 2003** the utility promised to have workers trained by **November 30th, 2003** to clean the drains. Scott Burnell, public affairs officer for the Nuclear Regulatory Commission (NRC), describes the containment sump-pump issue "a credible one" (OC Weekly).

December 31st, 2003:

SCE's favorable Incremental Cost Incentive Pricing (ICIP) structure ends (a "generation incentive mechanism").

January 29th, 2004:

Reactor (Unit ?) leaks **144 gallons** per day for "two or three days;" leak described as "tiny" by the reactor spokesperson.

The leak was in a **2-inch-diameter** steel pipe that was part of a system of pipes that "purifies and recycles" water. The "pinhole" leak was to have been repaired and the reactor brought on line that weekend, and fully operational by the next week.

The reactor spokesperson said the reactor was shut down at 8 p.m. Saturday, two or three days after operators first saw the leak.

Comment Set 16, cont.
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Note that 3 days X 144 gallons per day = almost **500 gallons** of liquid! .That's no small leak!

16-7

March 6th, 2004:

According to an NRC report a month later, during the Unit 2 refueling outage, when operators were about to reload the core, the "B" train of the Post Accident Clean Up Filter System (which is meant to filter radioactive particles and gasses from the spent fuel pool during accidents, and helps control temperatures normally) wasn't functional due to "personal error" because the operators didn't review proper operating instructions.

March 31st, 2004:

NC Times: "Two failed water temperature sensors have forced operators to shut down S an Onofre's Unit 2 reactor before it could reach full power after a 45-day refueling and maintenance outage, a plant spokesman said Wednesday."

Some facts about San Onofre from that article:

Each steam generator is **66 feet** tall, **25 feet** in diameter, weighs **750 tons** and contains **9,350 metal tubes**. All day every day, **560-degree** reactor coolant is pumped through the tubes under **2,250** pounds of pressure per square inch. San Onofre's steam generators were designed to last **40 years**. However, inspectors began detecting cracks in the thin coolant tubes only **10 years** after units 2 and 3 came into service in **1983** and **1984**.

Edison had to plug **1,899** of Unit 2's tubes and another **534** have been repaired by inserting protective metal sleeves. All told, **10%** of Unit 2's steam generator tubes are **out of service**.

Unit **3** has a total of **1,227** ---- or **6.5%** ---- of its tubes plugged.

April 3rd, 2004:

"Incident" at SONWGS Unit 2 (see below).

Monday, April 12th, 2004

A short circuit at the San Onofre Nuclear Generation station Saturday shut down the plant's Unit 2 reactor just as it was about to reach full power after a "routine 45-day refueling outage" (NC Times).

Routine? 45 days? Not either!

Comment Set 16, cont.
Russell D. Hoffman

"Saturday's emergency shutdown was the second since Edison finished a biannual refueling process that was supposed to last only 45 days. The refueling outage was scheduled to last until Feb. 25, but operators detected two faulty coolant temperature sensors that forced a shutdown" (NC Times). 16-7

November 19th, 2004:

From an NC Times report **Nov. 23rd, 2004**: An aluminum plate called a "deionization plate" fell off due to unexpected amounts of vibration from the nearby turbine shaft (which rotates at **1,800 rpm**), caused Unit 2 to shut down at 8:07 PM Friday (**Nov. 19th, 2004**).

Unit 2 was running "without incident" since **April 4th, 2004**. Several of these aluminum plate had just been installed during the refueling outage.

Unit 3 was out of service at the time for refueling, so there was ZERO power being generated at the plant during the outage.

December 2nd, 2004:

At 2200 PSI, there is no such thing as a "tiny" crack: But here's a typical report, anyway:

Unit 3 to remain shut down through mid-January after tiny cracks are discovered in two of its water heaters.

Unit 3 was off line since **Sept. 26th, 2004** for a 55-day refueling when microscopic cracks were found in water heater sleeves attached to the pressurizers. The **30 heaters** "regulate the nuclear reactor's coolant to ensure the water inside the reactor's coil does not boil."

December 16th, 2004:

After this author and the Chief Executive Officer of Southern California Edison, Al Fohrer, went "toe-to-toe" in a pair of ***Viewpoints*** published in the North County Times **Sunday, December 12th, 2004**, a memo is sent by NUCLEAR SECURITY – SONGS to all employees of the plant (usually about **1,500 people**) accusing this author of "inaccurate and misleading remarks." Having obtained a copy, I posted it online with a detailed response to *each point* of the memo. Longer versions of Hoffman's original ***Viewpoint*** were also published locally by The Coast News (as a letter to the editor), and internationally by NIRS/WISE.

December 26th, 2004:

Tsunami devastates Indonesia, India, Sri Lanka, Thailand, Sumatra and other countries. In some areas, waves more than **60 feet** high are reported to crash into the shores. **300,000 people** killed.

Comment Set 16, cont.
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San Onofre claims their **30 foot** (possibly **35 foot**) sea wall is adequate to contain all possible tsunamis. Tsunamis caused by-underwater earth slides have reached **1,800 feet**!

16-7

December 29th, 2004:

Tornado touches down **50 miles** from San Onofre. The plant is not properly protected against tornado strikes. Numerous vital portions of the plant are vulnerable to this and asteroid strikes as well, not to mention terrorists with Rocket-Propelled Grenades (RPGs).

February 3rd, 2005:

Unit 2 shut itself off for another electrical problem -- this time a "digital fault recorder" tripped. SCE could not decide if the **$50,000 device** was working properly or not, so they replaced it. There are three such devices on site. (SD U-T)

February 7th, 2005:

According to AP, "The San Onofre Nuclear Generating Station could be forced to shut down as soon as 2009 unless regulators decide that energy customers should pay for $829 million in repairs."

February 16th, 2005:

"For the third time in three months, a reactor at the San Onofre Nuclear Generating Station has shut down." (Unit 2)

This shutdown was initiated due to a "faulty water valve." The valve was **18 inches** in diameter and original equipment (**1982**). It fed "non-radiated" water to various pumps for cooling. There are many valves like it (and just as old) at SONWGS. In **July, 1997** another valve's failure to open properly during "startup testing" caused Unit 3 to remain shut down at least 5 days longer than originally planned. The "identical valve" in Unit 2 was tested and determined to ALSO need "repairs." My guess is that "repair" really means "replace."

March 10th, 2005:

Environmentalists object to the proposed renewal of a state permit that allows Southern California Edison to use **2.4 billion** gallons of seawater each day to cool the San Onofre nuclear power plant. (SD U-T)

Comment Set 16, cont.
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From an ex-SONWGS worker's email to me:

16-7

Another event that could have been prevented was reported to the NRC by LER (I was the author) when a SONGS technician closed a breaker on an emergency bus, causing a direct ground through the switch yard. The ground caused the breaker supplying power to the emergency bus to open and resulted in a loss of power to the shutdown cooling pumps. The emergency diesel generators started but could not power the bus because the control power to the inadvertently closed breaker had been removed. Therefore, [the] breaker would not open (clearing the bus) during the emergency diesel sequencing. The reactor, shut down for refueling, was without cooling for a few minutes before the operators could align another pump. This event occurred because the technician did not fully understand the operation of the break he was sent to repair. Present at the time were the System Engineer and the Operations Supervisor and several other "lookers." I thought that it was significant that none of the people present realized the consequences of the technician's plans. Nor did any of them halt the work because they were not sure what would happen. Also, it was unrecognized by those planning the work that the temporary ground in the switch yard would prevent the emergency diesel generators from performing their intended safety function.

In another email to me, the same ex-San Onofre employee (who still believes in the dream of nuclear power, by the way), talking about a different LER (Licensee Event Report), stated:

"I believe the report contained statements that were designed to deliberately deceive the NRC. Two days after I raised that concern with the NSC [Nuclear Safety Concerns] office, I was reassigned to other projects . . . The work environment became so hostile, I retired in August 2003."

UNIT 1 was a failure, too:

And let's not let them forget about how things went with Unit 1, which was a loosing proposition from DAY ONE and from which we now have enormous piles of deadly "spent fuel" radioactive reactor cores. Here's an actual quote from a scholarly report available online:

REACTORS;SEMIMETALS;SHUTDOWNS;THERMAL REACTORS;VAPOR GENERATORS;WATER COOLED REACTORS;WATER MODERATED REACTORS
Description/Abstract: Few nuclear reactors have been shut down for periods on the order of several years - and then restarted. Those that have experienced this type of history are sources of a great deal of information concerning reactivity changes and in-core power redistributions due to nuclide decay. This paper discusses the core reactivity changes due to this nuclide decay and presents actual data illustrating the net effect of these changes on the critical boron concentration (CBC) rundown curve and the in-core power distribution at the San Onofre Nuclear Generating Station Unit 1 (SONGS-1).

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Comment Set 16, cont.
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URLs for additional information by this author:

SHUT SAN ONOFRE!:
http://www.animatedsoftware.com/environm/onofre/index.htm

POISON FIRE USA:
An animated history of major U.S. nuclear activities, including at least:
1033 nuclear bomb blasts
21 subcritical tests
190 nuclear submarine launches
41 Boiling Water Reactors
83 Pressurized Water Reactors
28 Nuclear space launches
10 Nuclear Aircraft Carrier launches
9 Nuclear Cruiser launches
Numerous mines, processing facilities, waste dumps, etc:
www.animatedsoftware.com/poifu/poifu.swf

STOP CASSINI web site. NASA plans to launch approximately 135,000 Curies of Plutonium 238 in 2006 on board a space probe called NEW HORIZONS. STOP THEM!:
http://www.animatedsoftware.com/cassini/index.htm

NO NUKES IN SPACE (FLASH animation):
http://www.animatedsoftware.com/mx/nasa/columbia/index.swf
or try:
http://www.animatedsoftware.com/mx/nasa/columbia/index.html

Internet Glossary of Nuclear Terminology / "The Demon Hot Atom":
http://www.animatedsoftware.com/hotwords/index.htm

List of every nuclear power plant in America, with history, activist orgs, specs, etc.:
http://www.animatedsoftware.com/environm/no_nukes/nukelist.htm

List of ~300 books and videos about nuclear issues in my collection (donations welcome!):
http://www.animatedsoftware.com/environm/no_nukes/mybooks.htm

Learn about The Effects of Nuclear War here:
http://www.animatedsoftware.com/environm/no_nukes/tenw/nuke_war.htm

Comment Set 16, cont.
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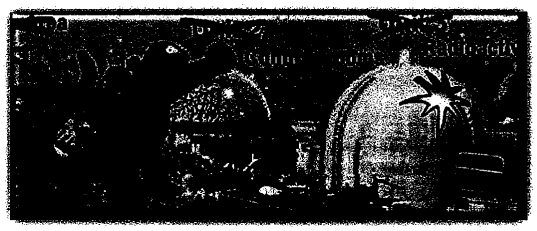
Protecting California is EVERYONE's responsibility --
and it CAN be done!

The dangers discussed in this document are very real.

But at least we are safe from *this* threat:



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The author wishes to thank numerous technologies for making this document possible, and numerous people (who hopefully know who they are) for their aid in collecting and crosschecking the facts presented here. The author, however, assumes all responsibilities for errors. Please contact the author if you have any questions, suggestions, or corrections.

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Thank you!