Chapter 1:
Bush's Nuclear Push

(And Now McCain Wants USA 80% Nuclear For Our Electricity, Just Like France[a])

This chapter is dedicated to Karl Grossman, a prolific American champion of common sense and justice.

Nuclear power is "safe and clean," our President who thinks God speaks to him personally, repeats to us over and over and over again. While God might have told him to invade Iraq,[1] the town of Godley in Illinois has been contaminated by vast nuclear waste spills so its citizens in our nation's heartland now have to drink bottled water. Exelon, who at first denied any such spills ever occurred from their Braidwood nuclear reactor and its pipings, eventually, after persistent local investigation, admitted, well, uh, yes, they did.

22 "tritium-laced" "unplanned releases," start-

a- France's actual percentage of electricity produced by nuclear power is closer to 75 percent. 'Concern Over French Nuclear Leaks,' BBC News, 24 July 2008, http://news.bbc.co.uk/2/hi/europe/7522712.stm

Godley, Illinois in the heartland of America, was a victim of multimillion gallon radioactive waste spills that were denied to have ever occurred for a decade by the Exelon nuclear corporation.

ing in 1996, were not confessed to have happened, until nine years later![2]

MILLIONS of gallons of radioactive water meanwhile poisoned Godley's shallow sandy local wells. Unfortunately, while citizens pick up their family rations of bottled water today, provided guiltily by Exelon, they still live in fear of future nuclear waste spills.

Many Godleyans are also aware that tritium, an 'activation product' resulting from fissioning of uranium in their "cream of the crop"[3] nuclear reactor, can pass through their skin while they are showering or even washing their dishes.

According to the Grandfather of Health Physics, the late Karl Z. Morgan, tritium

> "is the only radionuclide for which we assume as much is taken into the body via skin penetration as by inhalation. It is the MOST invasive of all radionuclides and distributes

itself rather uniformly to all organs and all body tissues on a microCurie per gram basis. It presents a somatic, genetic and teratogenic [cancerous] risk. It cannot be separated from liquid waste by evaporation, a process used to concentrate most radionuclides [especially in nuclear reactors]."[4]

Though our President may claim that nuclear power is "safe and clean," or other Nuclear Energy Institute (NEI)–paid touters like Patrick Moore or Christy Todd Whitman might croak to us that nuclear is 'green,' Americans should know that there are more than 500 other radioactive elements or "radionuclides" besides the deadly tritium, that are produced in each of our 104 nuclear plants every day.

Patrick Moore, public relations flak for the nuclear industry. Salaried via the lobbying organization of the nuclear industry, the Nuclear Energy Institute. Since 1986 has "spent more time working as a PR consultant to the logging, mining, biotech, nuclear and other industries than he did as an environmental activist." He was NOT a founder of Greenpeace, with which he was associated from 1971-1986, according to prominent Greenpeace senior advisor Harvey Wasserman.†

† 'Money is the Real Green Power: The Hoax of Eco-Friendly Nuclear Energy,' by Karl Grossman, Extra! Feb. 3, 2008. Mr. Wasserman is the coiner of the rejoinder "No Nukes."

And, all of these are not perfectly contained within the walls or pipes or cooling ponds of these ultimately dangerous structures that all too often leak, or vent some amount of these radionuclides to our towns to contaminate our air and water.

What we should be worrying about is cancer, or the death or maiming of our fetuses, from these various radionuclides. Very very few of which were present in our environment in any minisignificant quantity before there were nuclear weapons or nuclear power.

Remember this: "nuclear power" is basically a building or plant where enriched uranium is fissioned or split apart, producing heat that turns water to steam, which rotates a turbine, which generates electricity. People think it is some mythical magical super-powerful irreplaceable entity. But that's all it is. Unfortunately, lethal radionuclides and radioactivity are produced that somehow must be contained and disposed of for a period of many centuries. We still do not know how to do this properly.

As Michael Keegan says: "Electricity is but the fleeting byproduct from nuclear power. The actual product is forever deadly radioactive waste."[6]

That's what is 'green' about nuclear power - - slimey, forever radioactive green.

Be aware that one of the reasons the USA never signed the Kyoto Protocol on climate change is that nuclear power has been excluded from being accepted as a 'clean' technology[7].

Also be aware that the *original* function of today's nuclear power plant was to produce plutonium for our atomic bombs back in the 1940's. Then someone figured the plant could also generate electricity that would be "too cheap to meter." Which has not proven true. In fact, nuclear power is still so uneconomical, even today it requires massive subsidies from our federal government for our utilities to continue utilizing it. This includes the latest Energy Act of 2005 that could give $20.5 BILLION as subsidies to nuclear power![8] And if Joe Lieberman, the Senator from Connecticut, and his cronies have their way, you could make that $550 BILLION of your and my money in our fast falling economy where dollars are supposed to be scarce. That would be via the so-called 'Climate Security Act' and its sneaky not-yet-publicized *amendments*, which you should get all your friends and foes to call your Senators about via 202-224-3121, and tell them to vote against, with all its components, whenever the bill is re-introduced.[9]

Funny: if your house is in the worry-zone, located close to a nuclear plant, you cannot get any

insurance against a nuclear accident. [Actually, you can't get insurance for a nuclear accident no matter where you live in the USA.] The insurance industry, in other words, considers liability for nuclear accidents a totally unacceptable risk. Yet, thanks to the Price-Anderson Act, recently re-approved by our Congress in 2005, the companies that deploy nuclear power plants ARE protected against nuclear accident expenses above $10 BILLION. If an accident occurs at one of the nuclear reactors around New York City, and contaminates the metropolitan area essentially forever, that liability would certainly be in the TRILLIONS of dollars, not a 'mere' $10 BILLION. AND YOU THE U.S. TAXPAYER WILL FOOT THE BILL FOR THE EXCESS ABOVE $10 BILLION, NOT THE NUCLEAR CORPORATIONS! (The cost incurred from the Chernobyl nuclear accident in the Ukraine has been estimated at $300 BILLION and rising....[10])

Latest reports in the New Scientist and the scientific press in general are finally linking increased numbers of cases of childhood leukemias and other cancers in areas surrounding those citizen-uninsureable nuclear plants to the nuclear plants themselves.[11] This is from common day-

Nuclear plants originally were constructed to produce plutonium for atomic bombs. They have not proved to be 'too cheap to meter' in producing electricity, instead requiring multi-billion dollar subsidies for the industry to survive. Latest scientific studies are finally finding increased incidence of childhood cancers in the immediate areas surrounding nuclear plants.

to-day operations, not from the ultimate worry of an explosion like the one that occurred in 1986 at Chernobyl. At least 300,000 people have died so far due to that infamous accident, mankind's worst industrial accident ever.[12] (More on Chernobyl later in the chapter.)

As an example of a dangerous radionuclide that can cause cancer in your child, let us talk about 'the canary in the coal mine' for *fuel failures* in nuclear plants: strontium. When the shield-

ings of fuel rods or pellets of enriched uranium get so maximally hot that they fail or leak, strontium is the one radionuclide most easily detected of the more than 500 radionuclides that actually leak into the nuclear plant's water, floor drains and environment in general.

Strontium has a similar structure to the element calcium, which we hear on our TV's builds strong bones and teeth. However, unlike calcium, strontium is radioactive, emitting beta rays, essentially high speed electrons, flying out of those strontium atoms that don't belong in any of our children's bones. These rays or electrons hit the DNA in our child's bone cells, and bone marrow, where their blood cells are being made. Damage to the DNA strands occurs. Often this damage is spontaneously repaired by our miraculous body. Other times it is not. What can result are mutations or changes of the DNA. Sometimes these result in bizarre abnormal cancer cells. Or cells that are too damaged to survive.

In the bones, tumors can be produced that stay in one place and grow and grow until we notice them. Or leukemia can result, which is a cancer of the blood, with abnormal cancerous blood cells multiplying rapidly, or not enough cells surviv-

ing, or too many cells being killed off as a result of the beta rays' strikes.

Strontium can stay in the environment for a very long time. It is not like some bacteria we can kill immediately with boiling our water. Unnatural as it is in this Earthly world of ours, strontium's radioactivity hangs around for somewhere between 280-560 years. Half of it and its radioactivity decays away after 28 years. That is called its 'half life.' Over the following 28 years, another half of its remaining radioactivity will decay away, leaving ¼ of the original radioactivity active and dangerous. But it takes 10-20 'half lives' for strontium's 'hazardous life' to finally die out before we can stop worrying about it.

Too bad that today, nuclear spillage containing detectable strontium has been found in Westchester County in New York State, heading for the Hudson River that runs south alongside the island of Manhattan. Strontium has also been found in goats near the Millstone nuclear plant in Connecticut. Both of these contaminations should concern us all about the safety and cleanliness of nuclear power. The one in Westchester had strontium detected in three wells beside the Indian Point reactor[13] that you hear John Sterling

NY Yankees baseball announcer John Sterling shamelessly peddles the Indian Point nuclear reactor in Westchester county, just north of New York City, as having "zero greenhouse gases and reliable energy. Next to the Yankees infield, that's about as green as it gets." goes the ad Yankee fans have to listen to every day on their radio. Does Mr. Sterling know or care that Indian Point is currently leaking radioactive strontium outside the plant, already detected in a nuclear liquid plume underground headed for the Hudson River?

authoritatively advertise on New York Yankee radio. The Connecticut contamination has been claimed to have originated from the nearby New London, Connecticut submarine base where nuclear-powered submarines are made. However, many citizens of Joe Lieberman's home state angrily assert that their strontium actually is leaking from the aged Millstone nuclear plant complex[14], which activists have been trying to close for the last few decades.

If you could look inside a nuclear power plant, you would find an average of about 40,000 uranium fuel rods producing heat as a by-product of

nuclear fission, or splitting of the uranium atom into its various radionuclides. Within each fuel rod are immensely potent 'pellets' of enriched uranium. Each pellet is about the size of the first bone of your pinky finger, and can put out energy equivalent to what three barrels of oil can. That is quite a condensed parcel of power! And there are about four MILLION pellets hopefully safely contained within all those fuel rods.

The other side of the story is that one of these pellets can kill you from a distance of forty feet away if you are exposed to it for only twenty seconds without proper shielding. That is, after the pellet has been active in the plant for a year or more, building up its radioactivity.[15] In addition, we are not living in a perfect world, so, Americans should know that, even without an accident or cataclysmic breach, minimal amounts of these nuclear pellets' various 500-plus radionuclides/byproducts do weep through a protective cladding or covering into the surrounding cooling water.[16] Included here are decay or 'daughter products' of these radionuclides that can radioactively injure us if we are exposed to them due to imperfect containment during a plant's day-to-day operation.

Aren't we dealing with the Devil then, when

we air-condition every room in our house should we feel too warm, or inefficiently heat our buildings in the winter to keep off the chill, if we use nuclear power to do so? Aren't there better alternatives to produce electricity? (We'll answer that in the pages ahead.)

Plutonium, The Most Toxic Element Known To Man And Reprocessing Nuclear Waste

Plutonium is the biggie radionuclide that we should be most afraid of and learn about. Why? Because plutonium-239 has a half-life of 24,000 years! That means we have to worry about it being a hazard to us and our descendants for 240,000 to 480,000 years. AND we should remember henceforth that only one MILLIONTH of a gram is the lung cancer-causing dose!

If you let me do the math, there are 454 grams in one pound [see helpful accompanying table on next page]. That means, by advancing our nuclear power insanity, we could produce 454 MILLION lung cancers in our own citizenry should some sort of accident occur releasing just

one pound of plutonium! Hmmm, we only have about 300 MILLION Americans today....But, wait, this is a globalized world, isn't it? Why not think even more grandly?! TWENTY pounds of plutonium could kill ALL 6.8 billion human beings on this Earth via lung cancer if it is dispersed in small enough particles that could float all around our glorious planet! Yes, it may take 20-30 years for these lung cancers to develop; and, No, they will not have a label on them telling us that they came from inhaling some ultra-tiny, micron-sized plutonium particle into one of our lung sacs or 'alveoli.' But isn't nuclear power worth the risk?

Numbers to Help You

0ne trillion dollars >> $1,000,000,000,000
equals
one million million dollars
(or one million millionaires' money)

For plutonium ----> one microgram
equals a millionth of one gram
454 grams = one pound
one pound = 454,000,000 micrograms =
454 million micrograms
enough to give lung cancer to
454 MILLION people
@ 1 microgram per cancer

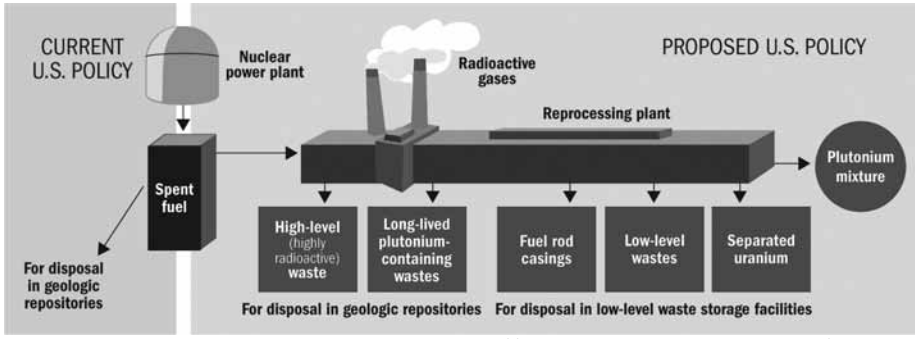
Oh, you think there can be another way? You know now that the original nuclear power plants were devised to produce plutonium for our first atomic bombs. What about the fact that twenty pounds of plutonium is enough for some terrorist or 'rogue state' to make an atomic bomb equal to the destructive power of the bombs we dropped onto Hiroshima and Nagasaki, Japan, to end World War II? Or that EACH of our 104 nuclear plants produces between 400-1000 POUNDS of plutonium every year?! Are you aware that George Bush wants to import nuclear waste from other countries to 'reprocess' it, and extract the plutonium (and uranium) for our use?

Would you think it advisable to consider, when all is said and done with "the dirtiest single step in the nuclear fuel chain"[17] - - meaning reprocessing - - where the nuclear waste will go? The act of reprocessing will have multiple NEW waste streams created from chopping up the fuel rods and dissolving them in hot acid. Radioactive gases and liquids resulting from the reactions will produce "significant 'routine' releases of radioactivity into the environment."[18] There could be explosions in the reprocessing plant of the solvents and volatile materials utilized, that could con-

taminate wide areas surrounding the reprocessing site. Eventually, the reprocessing plant itself will get too contaminated to operate, and have to be treated just like radioactive waste itself,[19] to be buried somewhere....probably in some poor area where the locals will not have the financial sustenance to fight such siting, as usually happens with most waste siting in our great country.

A 2001 report found that "80 percent of the collective radiation dose of the entire French nuclear power industry, and 90 percent of the radioactive emissions and discharges from the British nuclear power program, come from commercial waste reprocessing,"[20] which is allowed in these two countries. And their citizens pay the price.

"The British reprocessing center at Sellafield has discharged over 1000 pounds of plutonium into the sea, which has been detected in children's teeth throughout the British Isles... [This concen-



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tration] in children's teeth decreases with distance from Sellafield, which indicates that the releases from the reprocessing facility are to blame. Radioactive contamination of the seafood supply has caused downstream governments from Ireland to Scandinavia to protest [these discharges]."[22]

One study "found that male Sellafield workers' exposures increase their children's risk of leukemia and non-Hodgkins lymphoma."[23] Not something you would like to have as a consequence of your daily labor.

Similarly, around the French reprocessing center at La Hague on that country's northern coast, the surrounding population also has increased incidence of childhood leukemia. The difference here is that this was associated with the radioactive pollution of the environment around the facility, not the daddies' radiation exposure.

And for you beach-goers, and seafood-lovers: "Consumption of local fish and shellfish, as well as mothers and children visiting the local beaches, have been associated with increased risk of contracting leukemia,"[24] around La Hague. Not something your local or national tourist boards would like to be broadcast over global or even European television.

Further stated: "elevated levels of certain child-

Scientists have found an increased risk of contracting leukemia from consuming local fish and shellfish, and even from visiting the beaches around the contaminating nuclear reprocessing plant in La Hague, France.

hood diseases and stillbirths are present around these currently operating reprocessing facilities in Europe,"[25] that you don't want to go near. Have you EVER heard about this?

At least President Gerald Ford did ban U.S. reprocessing of nuclear waste back in the 1970's after India produced their first nuclear bomb and exploded it, supplying the plutonium for the device via reprocessing — that they had claimed would be performed as a "peaceful use" of the technology.[26]

But George Bush has his Global Nuclear Energy Partnership (GNEP) to get the funding for reprocessing that our Department of Energy expects will cost us at least $20 to $40 BILLION.[27] And we will possibly be IMPORTING nuclear waste into our country from all around the world to feed these reprocessing plants! The USA could become the world's dumping ground for nuclear waste, in other words! (See more about this in Chapter Five.)

How could our duly elected representatives allow any of this to go on? It helps that most Americans live their lives in the dark concerning such nuclear information you have been receiving on these pages.

The USA Is 'The Persian Gulf of Wind'

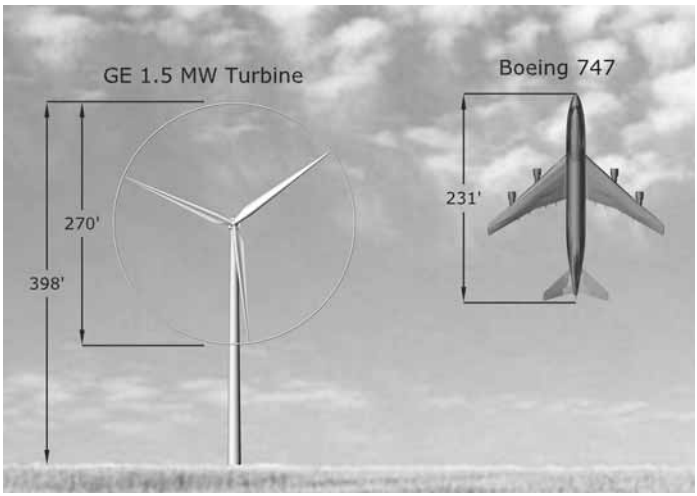
Why doesn't our media repeat and hype up the wonderful news that our country is so blessed with such great wind power potential that is has been called "The Persian Gulf of Wind?" Yes, let it be known that the winds that blow through our states of North and South Dakota alone could supply 2/3rds of our nations' electricity. And George Bush's state of Texas could supply the other necessary 1/3rd ![28] In fact, just about every state has some wind power potential.

T. Boone Pickens is investing $10 billion into what will be the world's biggest windfarm in Texas.[29]

Texas now leads the USA in windpower production.[30] The Lone Star state already has enough wind turbines harvesting Texas breezes to power 1,000,000 homes![31]

Denmark produces about 25% of its electricity today from wind power.[32] Germany is phasing out nuclear power because it leads the world in windpower production (and is fast buying up much of the world's solar power technology[33]). Renewable energy supplied 14% of Germany's

T. Boone Pickens is investing $10 billion to build the world's biggest windfarm in Texas, the USA's #1 windpower state. The USA is now ranked Number Two in the world in windpower capacity, behind Number One, Germany.



But 37 wind turbines like this 1.5 megawatt General Electric (GE) model could supply all of Kauai's homes with electricity.

electricity in 2007, with windpower producing 7.4% of German electricity. By 2020 Germany is projecting that 27% of its electricity will be generated by renewable forms of energy production.[34]

Just to show you how close we are to using wind power everywhere the wind blows today in the USA - - our great nation is now ranked as the world's Number Two windpower producer, by the way[35] - - let me tell you that our currently most popular selling larger wind turbine produces enough electricity to power 400 homes. It produces 1.5 megawatts and is made by General Electric, the same company that also is our major producer of nuclear power plants.[36] (The average

nuclear power plant produces 1000 megawatts when it is functioning properly online.)

Putting this in very practical terms, let us take the island of Kauai in the state of Hawaii. With a population of 58,000 currently, taking an average home to house a family of four, one windmill to 400 homes with then 1600 people supplied by one windmill, only 37 windmills would be all that would be needed to power Kauai's homes' electricity needs.[37] And Kauai is a very windy island. Yet, that does not include the possibility of using solar power there, which surely should also occur in the very near future.

In fact, the way the smaller home wind turbines are made includes a solar component connection mounted on the turbine. Ron Kimmel of the American Wind Energy Association (AWEA) tells me that 90 percent of all home wind turbines sold have this connection available for solar system hook up, provided for the homeowner by the wind turbine salesperson. The most popular home wind turbine version currently costs about $55,000 minus rebates and the back-spinning of your electricity meter reducing your monthly bill by the amount of electricity generated above the needs of your home that you end up sending back into the grid system.

The most commonly sold home wind turbine that can supply all your home's needs is rated to theoretically generate ten kilowatts of electricity (1000 kilowatts equals one megawatt).[38]

If only Ronald Reagan didn't take those solar panels off the White House roof back in 1981 that Jimmy Carter had placed there.....And cast our energy funding back then to nuclear power predominantly....where would we be today, one has to wonder...?....

Yes, solar power. Cal Tech physicist and author David Goodstein tells us that an area in one of our deserts just 80 miles square could supply all of the USA's electricity needs. If we go whole hog, this could be accomplished within a decade, he states.[39] Imagine if we round up our manufacturing resources like our being-abandoned Michigan auto plants, as one example, and utilize these and our valuable workers to mass produce solar technology, now that the car production is going south and east. . .

And don't forget hydrogen as another alternative form of energy supply. Instead of propane tanks heating your home, or electrical wires supplying power flowing one way from a centralized utility company plant into your house, you may have your own hydrogen fuel cells on your prop-

erty, storing and steadily contributing to your home's electricity current. Fuel cells do require some form of energy to produce the hydrogen to get a chemical reaction going that will result in water as the only waste product(s), in either liquid or vapor form (plus heat). That could mean having a wind turbine or some solar power apparatus as your primary energy source(s) if one wanted to engineer a most ecologically unpolluting system.

Electrolysis, or the simple splitting of water, into hydrogen and oxygen would be the ideal technology to produce the hydrogen for the fuel cells, via the energy forms just mentioned above.

A most attractive attribute of fuel cell technology is the extreme reliability. Typical downtime for minimal maintainance is less than one minute over a six year period![40]

As with other alternate forms of energy, if you have extra electricity running from these hydrogen fuel cells that you don't have to use right now, that you want to sell because of the needs of whatever market might be out there, or just to help balance your budget, you can send it off into the electricity grid system, saving/earning money as you do so. For today more than half of our fifty states have legally enstated 'net metering,' forcing utility com-

Home generation fuel cell units, as big as a suitcase or a refrigerator. Japanese government earmarking $309 million per year for fuel cell development; plans for 10 million homes ~1/4 all Japanese households - to be powered by fuel cells by 2020. Though may use natural gas as hydrogen source. See http://www.nextenergynews.com/news1/next-energy-news3.5b.html for more details.

panies to allow the consumer the right to lower her/his electricity bill by having her/his meter turn backwards when extra electricity is sent flowing back into the grid. Yes, we non-commercial homeowners could make modest profits by this activity.

However, during most of the latter half of the 20th century, utility companies successfully prevented such a thing from being allowed. This is one big factor that prevented especially wind power from taking off in America back in the 1970's.

Individual homes, or communities, or businesses could have their own wind turbine, solar energy devices, and/or hydrogen fuel cells integrated into a functional system to produce real energy independence. Though utility lobbyists tried to ward off

the inevitable, please be informed that industries requiring uninterrupted electricity flow are already riding on the fuel-cell bandwagon, including banks, manufacturing plants, large commercial buildings, telecommunications, and soon, very soon, perhaps your own home may be included![41]

Many of us may have thought that President Bush got the message when he promised over one million dollars to fund hydrogen power research in his January 2003 State of the Union address. However, the reality is that instead of seeing a pollution-free hydrogen future, our nuclear-deranged President meant nuclear power generated hydrogen. And thanks to the Energy Act of 2005, $1.25 BILLION dollars has been carved into our bloated pro-nuclear budget for another ridiculous nuclear scam to be heaped upon the backs of the American taxpayer. That money will go to Idaho to construct a nuclear reactor there that might be coupled with the production of hydrogen.

Energy Efficiency: Negawatts, Not Megawatts

Of course, the most practical and least expensive way to lower our energy bills and needs, is the idea of 'Negawatts, not Megawatts,' other-

wise known as energy efficiency. According to Amory Lovins, the physicist who might be my Energy Department Secretary if I were President: "each dollar of federal investment in energy efficiency has yielded over four dollars in economic benefits to the nation - - benefits in the form of new products, new jobs and energy cost savings to American businesses and households."[42] The array of new light bulbs, dimmers, tuneable ballasts, superwindows; plus turning off motors and electrically draining appliances efficiently, are just some ways to make us more energy secure.

With electricity being the "costliest form of energy...Each unit of saved electricity saves three or four units of fuel, chiefly coal, at the power plant. Saving electricity avoids much pollution, because power plants use one-third of all fuel and produce one-third of the resulting carbon dioxide (CO2), one-third of the nitrogen oxides (NOx), and two-thirds of the sulphur oxides (SOx) [plus unacceptably unquantified cancer-causing radioactivity[43]]. Saving electricity therefore yields great environmental as well as economic leverage. And because saving electricity is cheaper than making it, pollution is avoided not at a cost but at a profit."[44]

Remember that only two percent of USA electricity is generated by oil, for all the confusing talk about our being "independent of foreign oil," that you continually hear. Most of our electricity is actually generated by coal [~50%], and about 19% is generated by nuclear power. 19% is also the amount generated currently by natural gas.[45] Less than two percent is generated by our renewable sources of the future: wind and solar, almost all of this percentage from wind right now.[46]

Also be aware that most of the uranium, about 80%, that we use in our nuclear plants also comes from foreign sources[47]. The debate about nuclear power should not mix apples and oranges. The USA uses 40% of the world's gasoline every year; nuclear power does NOT power your car, SUV or truck. Though hydrogen could, and does supply 50% of the power for the buses of Iceland, out there in the north Atlantic Ocean.

One problem with solar, wind, and any form of electricity production that has been very errantly presented to the American public is transmission and distribution. Although many responsible individuals may tell us that resistance in our grid cables limits efficient transmission to a few hundred miles from its point of generation,

the truth is that DC transmission can efficiently travel 4000 miles; and AC transmission about half that. About 1/2 percent is lost per 100 miles of transmission. So if we went coast to coast, say 3000 miles, with our electricity, we might only lose 15% of it, which is only a nominal loss for the overall efficiency and profit that will result. Distribution losses are higher than transmission losses actually, which have to be dealt with no matter how far the electricity travels.

Yes, the DC current usually has to be converted to AC current at the distribution centers in the majority of cases.

The real big problem today is that our electricity grid is not very well interlocked between our three major grids (eastern, western, and Texas) and nine major power pools. This makes it very difficult to send power from Oregon to Georgia, or Ohio to Arizona. However, President Bush has done one excellent thing while in office: he has started the conversion of these various grids into a smoother, better conjoined interstate system linking our smaller transmission systems across the nation.[48] Meanwhile, our scientists are working on improving electricity transmission, for example, by developing 'superconductors,' minimizing the resistance to energy flow at everyday temperatures.[49]

Using your imagination outside the current box of reality, please picture that wind, solar, and hydrogen power do NOT have to be produced in some central 'farm' or utility-owned plant. They could be produced on your own land, or on your roof, or just outside of your little town on public land. Of course, just think about it: would the monopolistic utilities want THAT to happen, and then lose all their business with such de-centralized activity going on? Parlay that onto the stock merchants and amoral investors who only care about making some profit on the dollars they've piped into these utilities within our market economy…

But, when Justice arrives on some sweet train of Wisdom, tomorrow's practical forms of energy production that cause only minimum pollution, if any, shall arrive to power your home's needs, and that of our innovative businesses and industry. And perhaps our transportation too. It's coming. Once the above information gets out, and obstructive corrupted politicians of today are replaced with enlightened dedicated new faces who do CARE about us millions of Americans, we can be the ones to lead the world in proferring such ecologically favorable technology.

Meanwhile, Germany Leads The Way In Alternative Energy

What about you evening news watchers? Are you aware that Germany is phasing out nuclear power? How could that be? Ah, because they are installing at least a nuclear power plant's mega-wattage-worth of new wind turbines EACH YEAR. Without the radioactive pollution, expense, and anxiety that goes along with the nuclear power option.

As of 2008, Germany has 22,247 megawatts of wind power[50], generating 7.4% of their electricity. The average nuclear power plant generates 1000 megawatts. Germany currently has 24 nuclear plants. (See windpower map in Introduction.)

There could be another reason for the German government to move in this denuclearizing direction. Have you ever heard about Gorloben? and the biggest deployment of police in Germany since the end of World War II. . . . ? . . .

No? Even with your hundreds of cable and DirecTV channels? Don't feel too left out. Most Americans missed the 1997 debacle that most of Europe was very aware of, when German author-

ities tried to ship just six (6) containers of nuclear waste to Gorloben, a small farm town south of Hamburg. The casks were going to be 'interim' stored above ground in a building that looked like 'a soft drink bottling warehouse.'[51] 30,000 police and $100 MILLION dollars had to be allocated to overcome adamant public protests and roadblocks that were occurring along a 300 mile transport route.

In one narrowed road, incensed citizens deeply imbedded a ten foot tall stainless steel cross to prevent the accompanying motorcade from proceeding toward its goal. People have to be pretty angry, and many fellow villagers must be very sympathetic, for something like that to happen.

Just think what will happen if and when attempts are made in America to transport 20,000 to 70,000 high-level nuclear waste shipments thousands of miles from all corners of the country to unsafe sites, or 'repositories,' like the one at Yucca Mountain in Nevada. Scientists have already said that Yucca, with its 33 earthquake faults, and more than 600 earthquakes that occurred within a 50 mile radius between 1976 and the 1990's, registering at least 2.5 on the Richter scale,[52] did not constitute an acceptable area to

store nuclear waste. And the entire state of Nevada does not even have one nuclear plant.

Any of these shipments could be susceptible to a terrorist ambush or bazooka-ing that could blow the shipping casks apart. "Mobile Chernobyls," these radioactive transport loads have been called, after the world's worst nuclear/industrial accident ever at the Chernobyl nuclear plant in the Ukraine in 1986. Hundreds of our cities, and thousands of our smaller towns will be at risk along the myriad of routes these shipments will take. Once they might begin, expect them to go on for at least thirty years.

I don't think you will be very happy to find out that an accident breaching the inadequately tested casks, could kill your curious child with a mere ten seconds of exposure? Yes, if she stands but three feet away for those ten seconds, say on a dare, after the truck with its very hot cargo turns over, or the train derails, she could die within two weeks, from radiation sickness, where her hair falls out, her immune system implodes, she bleeds from many orifices, and dies an agonizing nuclear-powered-death.[53]

Additionally, those 'casks' that your trusted officials may claim are "safe" for nuclear waste

transport have not been sufficiently tested at diesel fire temperatures, or adequate heights of descent for compromisability. You should know that the Nuclear Information and Resource Service (NIRS) and the World Information Service on Energy (WISE) jointly reported on March 17, 2006 in their Nuclear Monitor issue number 643 that "conservative estimates reveal that each truck cask on the highways would carry up to 40 times the long-lasting radioactivity released by the Hiroshima atomic bomb. Rail and barge casks, six times larger, would carry over 200 times the long-lasting radiation released at Hiroshima. Release of even a fraction of this cargo would spell unprecedented radiological disaster."[54]

Have you ever seen how long it takes for a train to stop when it's moving at a good rate of speed? It's like an oil tanker or an ocean freighter. Hit that undetected submerged rock, or squiggle off the parallel tracks, and it might take a few miles to come to a halt. Maybe in the middle of your town, or in your reservoir that supplies your city with drinking water. If a diesel fire starts aboard, feeding on the cargo, it often burns for days. Yet our Nuclear Regulatory Commission (NRC) has only required that these monster-sized casks be

tested to burn at 1475 degrees Fahrenheit for half an hour. Alas, diesel fires burn at 1800 degrees Fahrenheit![55]

As the NIRS/WISE analysis quoted above states further: "Shipping is probably the weakest link in the entire chain of irradiated nuclear fuel management."[56] Although we are talking about up to 70,000 fuel shipments - - and that is <u>without</u> increasing our total number of nuclear plants - - the truth is that there have only been 2,500 to 3,000 irradiated fuel shipments "in the U.S. since

the dawn of the Atomic Age 63 years ago. Even the limited experience of such shipments...has seen numerous incidents and accidents, including radioactive leaks beyond the vehicle, as well as over 50 incidents of shipments radioactively contaminated on the exterior of the shipping container, endangering not only workers, but also the general public."[57]

Yet the federal government is currently allowing shipping casks "to give off 200 millirem per HOUR at their surfaces."[58] This exceeds the total amount of 'background radiation' most citizens are permitted to receive in a YEAR, not including radon exposure. (More on this in Chapter Five.) "Nuclear workers, truck drivers, locomotive engineers, railroad workers, inspectors, toll booth attendants, gas station employees and customers, innocent bystanders at rest areas, residents living along transportation routes, and unsuspecting passersby on the highways all face radiation doses [like this] if they come too close to such shipments."[59]

In the late 1990's "activists and investigative reporters revealed that 20-37 percent of all shipments into France's reprocessing facility were externally contaminated above regulatory limits

- many emitting 500 times the permissible dose, and one emitting 3,300 times the permissible dose!"[60] That is what looms ahead for us Americans if we ignore what the Bush administration wants to do with its renewed push to intensify our nuclear 'advantage.'

Another question for you, Dear Reader: Did you know that the original plan for September 11th 2001 was to crash airplanes directly into nuclear power plants? This was reported in the Nuclear Monitor on September 13, 2002. However, Al-Qaeda leaders decided against this option for fear it would "get out of hand." Back in 2001, the quote was: "for now." Today, or someday soon, their "Department of Martyrs" may decide to send suicide bombers to detonate themselves in or near a few of our nuclear power plants, new ones or old ones, where security is ridiculously insufficient, as has been widely reported via our television networks.[61] Or shoot some form of missile or bazooka at these blatantly vulnerable, incredibly toxic targets.

Then the resulting released plutonium particles, and those of the other 500-plus radionuclides, can fly wherever they may...Causing you and/or your children to suffer for us just *having* to have that technology that produces its extremely

long-lived lethal legacy....while only generating perhaps 50-100 years' worth of electricity.

Chernobyl

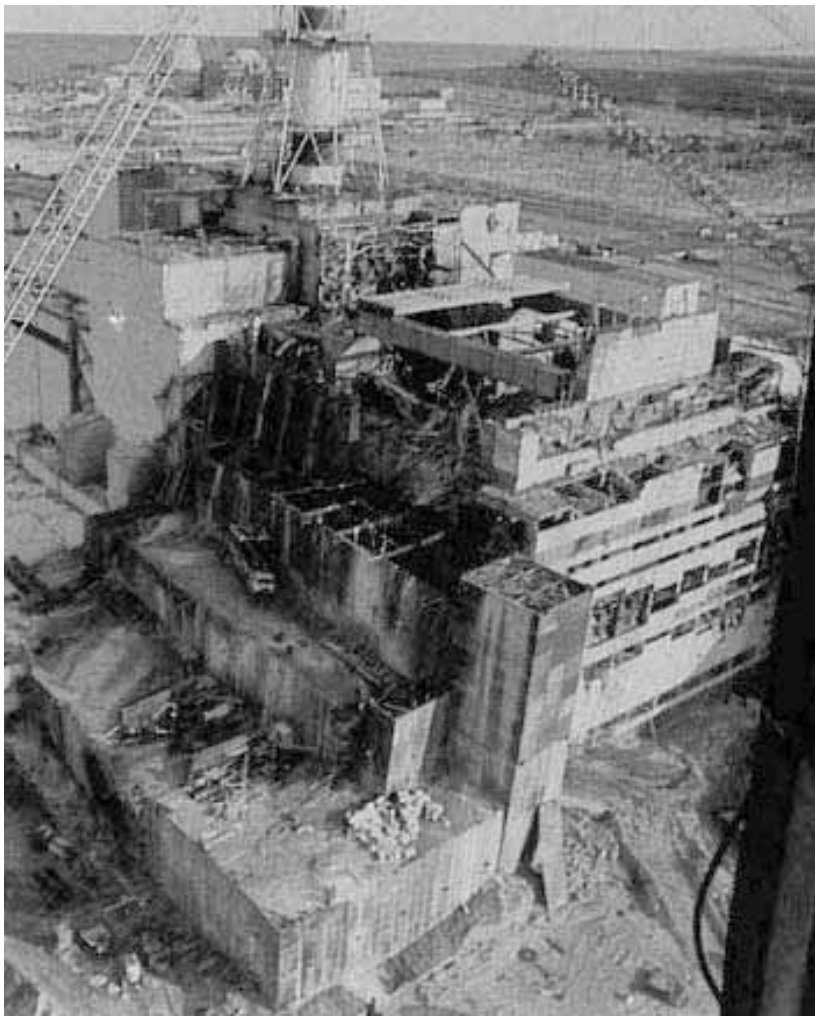
On April 26, 1986 there occurred the worst man-caused accident in the history of the human race. Testing was going on at reactor number four at the Chernobyl Atomic Energy Station in the northern Ukraine when power was dropped to 7%, but suddenly surged to 100 times 100% of full power in less than one minute!!! A catastrophic steam ex-

plosion occurred that "flipped the reactor's massive cap like a coin and left it wedged and hanging askew inside the ruined reactor. The reactor's core caught fire, leading to the largest single non-military radiation release in history."[62]

Estimates vary, but nuclear physicist Dr. Vladimir Chernousenko, who supervised the clean-up (and subsequently died from cancer) "for a 10-kilometer zone around the exploded reactor, [stated] that 80 per cent of the reactor's radioactivity escaped - - something like 7 BILLION curies" out of a possible 9 billion curies. That is an unbelieveable quantity of radiation. A food irradiation plant theoretically holds up to 10 MILLION curies of radiation.

Of course, the "Russians and the International Atomic Energy Agency (IAEA) claimed in a 1986 report that 50 million curies of radioactive debris, plus another 50 million curies of rare and inert gases were discharged."[63] Baloney for the nuclear soul, that report was later "condemned as a cover-up."[64] Sadly, Soviet authorities cared so much for their people that they "neither officially acknowledged the explosion, nor warned their citizens until May 2, 1986."[65]

Meanwhile, "the fire in the reactor core burned for ten days," continuing to release radioactiv-



The Chernobyl nuclear reactor accident has killed at least 300,000 people so far, due to the toxic radiation released far and wide after the steam explosion blew the reactor's core apart.

ity for months afterward.[66] Yet (from Svetlana Alexievich's tragic collection of 'Voices From Chernobyl'):

> "They suddenly started having these segments on television, like: an old lady milks her cow, pours the milk

> into a can, the reporter comes over with a military dosimeter, measures it. And the commentator says, See, everything's fine, and the reactor is just ten kilometers away. They show the Pripyat River, there are people swimming in it, tanning themselves. In the distance you see the reactor and plumes of smoke above it. The commentator says: The West is trying to spread panic, telling lies about the accident."[67]

Soviet authorities took advantage of their people's ignorance concerning radioactivity. That one cannot see, taste or feel radioactivity contributes to it being kind of unbelievable that it can kill you. Might I ask: Are Americans any better with their knowledge concerning radioactivity?

And what about the nuclear French, with more than 75% percent of their electricity produced by 59 nuclear reactors?[68] In the immediate wake of the Chernobyl explosion, "France, instead of taking precautions like other European countries, had its state television stations issue weather reports indicating that the cloud of radioactivity from Chernobyl had miraculously stopped short at the Franco-German border!"[69] Amazing how a society or culture, distorted by nuclear power, can have its people sacrificed to the radioactive gods.

Going slightly back in time now, to the scene of the disaster, from Sergei Vasilyevich Sobolev, Deputy Head of the Executive Committee of the Shield of Chernobyl Association:

"There was a moment when there was the danger of a nuclear explosion, and they had to get the water out from under the reactor, so that a mixture of uranium and graphite wouldn't get into it - with the water, they would have formed a critical mass. The explosion would have been between three and five megatons. This would have meant that not only Kiev and Minsk, but a large part of Europe would have been uninhabitable. Can you imagine it? A European catastrophe.

So here was the task: who would dive in there and open the bolt on the safety valve? They promised them a car, an apartment, a dacha, aid for their families until the end of time. They searched for volunteers. And they found them! The boys dived, many times, and they opened that bolt, and the unit was given 7,000 roubles. They forgot about the cars and apartments they promised - that's not why they dived. These are people who came from a certain culture, the culture of the great achievement. They were a sacrifice.

And what about the soldiers who worked on the roof of the reactor? Two hundred and ten military units were thrown at the liquidation of the fallout of the catastrophe, which equals about 340,000 military personnel. The ones cleaning the roof got it the worst. They had lead vests, but the radiation was coming from below, and they weren't protected there. They were wearing ordinary, cheap imitation-leather boots. They spent about a minute and a half, two minutes on the roof each day, and then they were discharged, given a certificate and an award - 100 roubles. And then they disappeared to the vast peripheries of our motherland. On the roof they gathered fuel and graphite from the reactor, shards of concrete and metal.

It took about 20-30 seconds to fill a wheelbarrow, and then another 30 seconds to throw the "garbage" off the roof. These special wheelbarrows weighed 40 kilos just by themselves. So you can picture it: a lead vest, masks, the wheelbarrows, and insane speed."[70]

There is a video of the clean-up showing this madness on the roof, each individual soldier's run actually lasting up to about 4 to 5 minutes worth of very high level radioactive exposure, from getting onto the roof, loading the wheelbarrow, or just a shovel, and then running it to the edge, where it could be tipped off and dumped over the side, then rapidly as possible exiting the roof.[71] Many of these men died, or their reproductive organs were severely compromised. Soviet wives, naturally, were averse to have sex with these men for fear that their babies would be congenitally damaged.

From historian Aleksandr Revalskiy: "A while ago in the papers it said that in Byelorus alone, in 1993 there were 200,000 abortions. Because of Chernobyl. We all live with that fear now."[72] Of malformed babies, or stillbirths, or children that will tragically develop cancer. Like the boy that was born with "a mouth that stretches to his ears and no eyes."[73] Or the girl born, that "wasn't a baby, she was a little sack... not a single opening, just the eyes....more simply: no pee-pee, no butt, one kidney."[74]

What about this, relative to getting volunteers for the clean-up, and what happened to one father and son, again from 'Voices From Chernobyl':

Soldiers on the roof of Reactor No. 4 (there are a total of four reactors located at the Chernobyl plant) pick up deadly pieces of radioactive graphite from the explosion and toss them down into the cauldron of the demolished reactor core.

> "...they appealed to our sense of masculinity. Manly men were going off to do this important thing. And everyone else? They can hide under women's skirts, if they want. There were guys with pregnant wives, others had little babies, a third had burns. They all cursed to themselves and came anyway.
>
> We came home. I took off all my clothes that I'd worn there and threw them down the trash chute. I gave my cap to my little son. He really wanted it. And he wore it all all the time. Two years later they gave him a diagnosis: a tumor in his brain....You can write the rest of this yourself. I don't want to talk anymore."[75]

Tragic. You *could* be cynical, and say, oh, that's not proven, there's no cause and effect. But, this

poor child and his father were not the only ones to experience cancer in their families very probably related to the Chernobyl disaster.

There are at least 4000 cases of thyroid cancer, that "a limited United Nations study" verified, mostly in children.[76]

The radionuclides of iodine, including iodine-129 with its mind-blowing half-life of 15.7 MILLION YEARS, are basically responsible for these thyroid cancers. However, some doctors have been thrown in jail, or into psychiatric institutions in various parts of what once was the Soviet Union [the Chernobyl accident occurred on April 26, 1986] for doing their duty, trying to report radiation-related illnesses and deaths. New cases of thyroid cancer continue to turn up as the next generations of exposed children (and fetuses), living on contaminated land, ingesting contaminated nourishment, drinking contaminated water, become sick.

Dr. Vladimir Chernousenko, who was also the former head of the Ukrainian Academy of Science, stated that although a 30 kilometer radius surrounding the Chernobyl plant was eventually evacuated because of contamination, it should have been a 600 kilometer (375 mile) radius. But

that would have then included the major cities of Minsk and Kiev, which probably would have made it difficult to accomplish, for political reasons.[77]

Remember that Byelorus, which is the country now, north of Ukraine, received the most radioactive fallout from Chernobyl, due to the winds blowing toward the north and northwest at the time of the steam explosion. One quarter of all the land there is contaminated as a result of the disaster[78] for at least 300-600 years. Mostly with cesium, which has a half life of 30 years. Though Dr. Chernousenko reckoned the contamination actually will last 100,000 years[79] (don't forget about the half-lives of plutonium-239 and iodine-129 being 24,000 years and 15.7 million years respectively, and these having to be multiplied by 10-20 times to get their 'hazardous lives').

As far as how many deaths occurred secondary to the Chernobyl accident, it has to be in the hundreds of thousands. Unfortunately, as you may see from the quote above about the "liquidators," no scientific tracking was arranged to follow their states of health. Estimates of their numbers alone commonly range around 700,000 individuals. Then there are all the other humans (and animals and plants) affected in contaminated areas,

The "Liquidators" were recruited or forced to assist in the cleanup, or the liquidation of, the consequences of the accident.

As a totalitarian government, the Soviet Union provided many young soldiers to assist with the cleanup of the Chernobyl accident, but did not provide many of them with adequate protective clothing...or with any explanation of the dangers involved.

Over 650,000 liquidators were involved in the Chernobyl disaster cleanup during that first year. This group included those who built the containment building called the "SARCOPHAGUS" over destroyed Reactor No. 4.

Above from: http://www.hlswilliwaw.com/GhostTown/html/chapter6.htm
http://www.elenafilatova.com

and beyond, who may have unknowingly inhaled some plutonium fallout, for example, in Wales or even in the USA. Then you have the 300,000 death figure from Dr. Alexey Yablokov, president of the Center for Russian Environmental Policy, as quoted in the Introduction from his 2007 book[80].

Also, be aware that the number of cancers in such accidents of radioactive exposure usually is DOUBLE the number of deaths that occur.

Does this jive with nuclear power being "safe and clean?" Or "green?" Or the misleading falsehood that some brazen proponents of nuclear power continue to regurgitate, that only 31 people died at/from Chernobyl? What do these people think? That the effects from all those curies of radiation released have produced no cancers or deaths, nor will they in the future? Or are they just foolish liars, pushing their nuclear power agenda ideologically, at the expense of all living things on this Earth?

"Radiation health experts working for the National Academy of Sciences [state that] most cancers that result from radiation exposure do not develop until 10-20 years after exposure. The highest incidence of cancer is expected to occur over the next 5-10 years [from 2006], and there-

fore no accurate assessment of Chernobyl's overall impact can be made until this period has expired."[81]

Kofi Annan, the former Secretary General of the United Nations added: "At least 2 million children in Belarus, Ukraine and the Russian Federation require physical treatment (due to the Chernobyl accident). Not until 2016, at the earliest, will we know the full number of those likely to develop serious medical conditions."[82]

When Dr. Chernousenko was speaking in Austin, Texas back in 1994, amongst other things he revealed were the following. He was asked about the Chernobyl reactor's containment structure. Many nuclear power cheerleaders will repeat the mantra that Chernobyl was an inferiorly designed type of nuclear reactor, and had no containment.

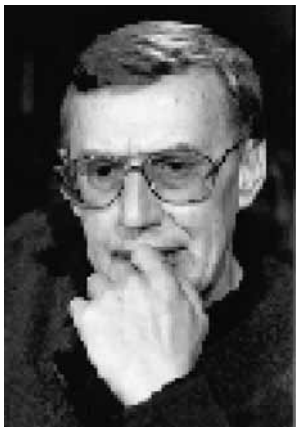
The Soviet reactors at Chernobyl did not have an inferior design, and they did have a containment structure, Dr. Chernousenko stated. However, "the force of the explosion at Chernobyl exceeded the protective capabilities of this containment by at least ten-fold."[83]

Also, he told his audience that "Dr. Rosalie Bertell, who participated in the investigation of the [1979] accident at Three Mile Island, [in Pennsyl-

vania,] can tell you, if a miracle hadn't occurred, and the hydrogen bubble within that containment hadn't dissipated, the accident within the United States would be comparable to the accident at Chernobyl. And the containment wouldn't have been able to protect from these dangers."[84]

Are we Americans ready to hear that? Dr. Chernousenko warned us all that "one more nuclear accident could destroy human civilization as we know it."[85] There are approximately 500 nuclear reactors in the world today[86], and the Bush administration has moved the goalposts toward planting more of them in civilization's backyards. Paying subsidies to an otherwise unsustainable mature industry, that can then use their $20.5 billion gift from the 2005 Energy Act, for example, to dole out money for advertising, propaganda, and political contributions to our governmental representatives to promote nuclear power, and all things nuclear. Skewing our essentially one-sided national "debate" that the media refuses to balance fairly with information like you are reading here. In effect, we are financing the nuclear establishment's deathwalk on the bones and souls of us and our innocent children with our own hard-earned tax money.

Oh, we hear that there could or will be a new generation of "inherently safe"[87] nuclear reactors. But listen to the words of the late Dr. Chernousenko, spoken to a Texas audience:



Nuclear physicist Dr. Vladimir Chernousenko, in charge of Chernobyl nuclear clean-up. Died from cancer, probably contracted during this service. Subsequent to his clean-up duties, he vehemently opposed nuclear power because of its inherent uncontrollable frighteningly powerful reactions "which occur within millionths of a second."

> "To construct a safe reactor is practically impossible either here or in Russia... we simply cannot get energy from such enterprises. Because we are dealing with nuclear processes, with uncontrolled reactions, which occur within millionths of a second, and no matter what kind of protection mechanism you design, sooner or later the object must explode and they will. Why were they created at all? When they were created, constructed, it was understood that they were extremely dangerous, but at that point the physicists were told that they must save the world from Hitler at any cost and as soon as possible. And unfortunately the physicists accomplished this, which they regret to this day."[88]

One last statement from Dr. Chernousenko about Ukraine nuclear plants and the data concerning disease and cancer in their surrounding environs, that you may ponder lingeringly - - for

you seldom hear about U.S. studies stated so simply and clearly:

> "We have conducted studies of the regions around 20 different nuclear plants in my country. In all of these territories we noticed an increase in the breast cancer rate—sometimes an increase of 15% over the normal level. We noticed a growth of anemia amongst children who lived in those areas, cardiovascular diseases, and cataracts. So from this you can conclude that even without the explosion of nuclear weapons there is quite a bit of danger to human lives."[89]

And just in case you think everything is under control in Moscow, twenty years after the accident, how about this report:

> "Nearly 20 years after Chernobyl, large amounts of radioactive goods are still reaching markets in Moscow from the west of the country and Byelorus. In 2005, some 830 kilograms of radioactive produce were seized by officials at markets in Russia's capital...Much of this produce consists of mushrooms and berries...all market places have a laboratory that checks goods before sale...[after] removing and treating the goods...[these] are classified as radioactive waste."[90]

Clap your hands if you think ALL the radioactive produce flowing into Moscow is detected as above....Then, when you realize the story is not over, you might as well know about the end of the line, or what should be the conclusion for nuclear power plants. Something very very ex-

pensive, called "decommissioning." When the utilities who own the nuclear plants have to own up to their responsibility to properly dispose of these plants that inevitably become too radioactive to continue operating.

Decommissioning or Disposing Of Over-Aged Nuclear Plants

Remember that when the question of financial cost of nuclear power is considered, this should include decommissioning. Plus, all the peripheral effects, including medical and community expenses of radiation pollution from the nuclear plant itself, and from mining and milling uranium; long-lived waste storage and safety; the exorbitant cost of enriching uranium with power most often supplied by coal combustion; transportation of waste, and security for waste shipments, in the time of terror paranoia; and now perhaps much much more of all of the above from President Bush's proposed move toward reprocessing, as discussed earlier.

What is supposed to happen is that when their time is up, when nuclear power plants become unsafe to operate further, due to the effects of

radiation bombardment and extremely intense heat on pipes, containment, metal, concrete, etc. When the erosion and radioactivity become too severe - - when their licenses *should* expire - - after about 20-30 years of operation - - there are supposed to be adequate funds, trust funds, available to pay for interring or entombing or chopping up the plants and their components, and sending them to a fool-proof nirvana where they can de-radioactivate without spoiling our land, water, or air.

Unfortunately, enforcing decommissioning has become a debacle due to the shabby integrity of our Nuclear Regulatory Commission (NRC) and the nuclear industry itself. Instead of being able to watch over, and correct any deficiencies in the corporate actions of clean-up, the NRC has effectively excluded the public's "right to review and intervene in utility processes that can amount to economic short-cuts and sloppy radiation controls resulting in excessive contamination to workers, the site, and uncontrolled releases into the environment."[91]

Besides that, <u>projected</u> costs themselves may be way off. You make your mess, you must put sufficient monies away to acceptably mop it up. Yankee

Rowe's 179 megawatt plant was supposed to cost $120 million to decommission, but actual costs of $500 million resulted. That was for a 179 megawatt plant, and the average plant produces 1000 megawatts. So, if we assume, probably incorrectly, that costs would be directly proportional for the bigger average-sized plant, we would expect close to three billion dollars to pay decommissioning costs for our common nuclear power plant. Of course, that is without complications, contaminations, unforeseen liabilities that could occur years into the hazardous lives of the radioactively tainted plant left-overs. Besides other factors that could produce inaccurate (higher) projected costs. . . .

Hear here that even for their small 179 megawatt reactor, Yankee Atomic Electric Corporation "acknowledged for the first time that they expect to raise electric rates in New England to help pay the cost of closing the reactor." This was reported in the New York Times on November 4th, 1994.[92] Imagine what this could mean for all the other reactors that have to be decommissioned, and how YOU could be suckered into paying THEIR bills, one way or another.

For example, "current bankruptcy law does not prioritize decommissioning costs above other

creditors' [claims]."[93] "As much as 50% of the remaining projected final costs [for closed nuclear power plants] are left to future ratepayers or taxpayers not receiving one watt from the retired nuclear power stations."[94]

That's an edited snapshot of the money end of things. Then there is the actual level of radioactivity that would be deemed acceptable for us and the operator/owner of the nuclear power plant to cease monitoring the area and dream of its locale/remnant(s) as a "green field" where we can plant our corn and canola, and frolic in nearby waters. Again, the NRC has whirling dervishly danced away from its responsibility to set up sensible standards.

In the words of NIRS in their year 2000 decommissioning report: "The NRC has reclassified decommissioning as not constituting a major federal activity and an activity that can be conducted under the original operational license without the availability of a public hearing on any potential safety issues raised by a particular decommissioning process. Utilities are now allowed to submit vague plans without any public scrutiny of the actual chosen process."[95]

Thank you, NRC. Our watchdog of the nucle-

ar industry. Recall that the NRC supposedly was created to replace the Atomic Energy Commission (AEC) because that agency had been behaving too much as a proponent of nuclear power, rather than serving the public as an impartial watchdog of the nuclear industry. Similarly, the International Atomic Energy Agency (IAEA) still acts internationally like the AEC did in the USA, pre-NRC. Remember that, as you read the news every day. And hear about the IAEA and its Director General Mohamed ElBaradei winning the Nobel Peace Prize, and censuring Iran, but still facilitating the multiplication of more nuclear power plants and thus, the threat of nuclear terrorism and weapons-spread worldwide.

These days we are concerning ourselves especially with Iran and North Korea, having the nerve to want to enrich their own uranium or develop a nuclear bomb. Does anyone ask why, if one country can have a nuclear bomb, or a nuclear power plant that can be used to produce plutonium, which in turn can be extracted from the plant's wastes, why can't another country do the same? Or, even better, why haven't more countries developed a nuclear bomb, besides the nine currently enrolled in the nuclear weapons brotherhood?

Maybe it is because of the Nuclear Non-Proliferation Treaty (NPT)? That 188 nations have signed onto. That went into force in 1970, and as a signed treaty is part of U.S. law. The main stipulation in the treaty is Article 6, which "commits the nuclear weapon states to good faith negotiations on nuclear disarmament in exchange for the promise by the nonnuclear weapon states not to acquire weapons."[96]

North Korea had signed onto the treaty, but withdrew in 2003. Five of the other nine nuclear weapons states remain signed onto the NPT, but are not following their commitment to reduce their arsenals. Not aided by the Bush administration's obstinate lead to rev up another nuclear arms race, like we had during the Cold War, before the USSR disintegrated in 1989.

Those five nations, you should know, are the USA, Russia, China, the United Kingdom, and France. Then there are the three nations that have never signed onto the NPT: India, Pakistan and Israel. These three states do not even have to submit to periodic inspections of nuclear facilities, as do the other 188 countries[97], which indeed includes Iran.

Who knows how many nuclear weapons states

there would be if not for the NPT? 25? 30? 40? Imagine what a nuclearly-rampant world we would have panicking us then! And recall that as blustery and foolish as the Bush administration - - OUR USA GOVERNMENT - - is behaving today, both George Bush and John Kerry agreed during their 2004 campaigning and debates that the biggest problem the world faces today is.....nuclear proliferation.

Of great concern for our country and the world is something that most Americans do not know enough about: the recent influx of profiteering in funding our nuclear ambitions. In addition to asking "Congress for $27 million to help jumpstart the country's first new nuclear weapons program in two decades...the money...[to]...be used to fund a competition between the Los Alamos and the Lawrence Livermore laboratories to fund and design a new generation of nuclear bombs to replace the country's entire nuclear arsenal,"[98] in blatant violation of the NPT, be aware that the Los Alamos National Laboratory in New Mexico is now being run, starting in 2006, on a 20-year no-bid contract netting about $2.2 BILLION per year. Plus the awarded consortium of companies involved, including Bechtel and Washington Group Inter-

national, along with the University of California, also is able to garner extra management awards of up to $1.5 BILLION per year via Los Alamos.

Greg Mello of the Los Alamos Study Group of New Mexico. Concerned with the unprecedented increase in the profit motive in USA nuclear weapons policy. If New Mexico seceded from the USA, it would be the world's third greatest nuclear-armed nation with approximately 2,500 atomic bombs.

"We've never seen this kind of profit motive in the nuclear weapons business up to now,"[99] Greg Mello, of the Los Alamos Study Group, tells us. He adds that the consortium members also "get an entree or a leg up in the nuclear power business, which they expect to be growing."[100]

Do you think this amplified profiteering policy will lead our country in the right direction? Have we forgotten about the destructive power of nuclear weapons, and the deliberate, dedicated process taken over the past sixty years to prevent any nuclear holocaust from happening? Does anyone consider the word PEACE for our world and our children anymore?

Is it really as Greg Mello says, that we want our nuclear weapons to "continue to evolve and remain a central part of the goal of so-called full spectrum dominance,"[101] as discussed in the Star Wars chapter (Three) ahead?[102] "Full spectrum dominance" meaning dominating the full spectrum of the war fields of air, water, ground, and now space, utilizing nuclear weapons, or the threat of using nuclear weapons, instead of adhering to the NPT and similar treaties to reduce the chance of nuclear destruction? ? (See images from Vision For 2020 on pages v, and xviii.)

Do we see that the nuclear industry is indeed one big happy family, producing lifetimes of toxicity, threatening apocalypse, because of how it has evolved? First the weapons, then the bright idea of nuclear power, now and forever the ultimate radioactive wastes to deal with, that our entrepreneuring minds are channelling into smoke detectors (americium), airplane ballast ('depleted' uranium), tank 'penetrators' and shielding ('depleted' uranium - - that turns out to be excessively flammable, so that both our tanks' and the enemies' tanks' shielding can catch fire, incinerating our sacrificial soldiers and theirs - - having a half-life of 4 BILLION YEARS! too much of it strewn across the battlefields of Iraq,

the Balkans, and recently Lebanon, to cancerize and kill present and future citizens of those areas) - - watches (tritium), food irradiation plants (using cobalt and cesium, generated in nuclear reactors - - the latter, cesium, being the major USA byproduct of nuclear fission/nuclear power, by volume; see Chapter Two), medicine (very short-lived radio-isotopes, which the nuclear lobbyists deceivingly present prominently as a portion of nuclear waste, though they are a minute percentage, and after rapidly decaying soon become the least toxic portion, most only being radioactively hazardous for a few days, compared to reactor and weapons' extremely long-lived radionuclides).

Where there is profit, there may not be conscience.

Front and center now, the G-8 countries and ex-KGB chief, Russian Demagogue Putin! Just in case you missed it, during the summer of 2006, the G-8 countries[103] decided in St. Petersburg, under Mr. Putin's leadership, that pushing nuclear power worldwide would be a great idea. Yes. But non-G8 countries "would not be allowed to enrich uranium fuel, or to reprocess spent fuel to extract plutonium."[104] The excuse was security concerns.

Be aware that part of the NPT deal for countries abstaining from developing nuclear weapons is the guaranteed "access to nuclear technology for peaceful purposes."[105] Sorry suckers, though you may wish to be treated equally on this unfair planet, while you "will be permitted to run [nuclear] reactors to generate electricity... [your second-rate country] will have to buy fuel enrichment and reprocessing services from G8 countries."[106] That's the way it's going to work.

And us haughty arrogant G-8 nations declare that we shall base our self-sustaining nuclear power dream/nightmare on reprocessing nuclear waste within our respective countries, our citizens be damned re the pollution and cancer, etc., that results; plus we shalt shine up and polish the defamed image of 'fast breeder reactors' to burn and produce plutonium! HARK AND BOW TO OUR BENEVOLENT POWER!

Mom, weren't we worried about nuclear proliferation, madmen (and madwomen) and terrorists getting their hands on plutonium?...Yet we want to produce as much of it as possible with one of the most dangerous technologies ever conceived, that has all but been abandoned for at least a decade? Sodium fires, the spectre of an explosion

in a nuclear plant FUELED with plutonium?!! [which is how a fast breeder reactor might work] Are our leaders nuts?

Remember henceforth that Dr. Vladimir Chernousenko warned us that "business people and the military are behind the building of nuclear plants."[107] Regardless of what crazy kind they decide will meet their profit or destructive goals.

But, to top it all, Vladimir Putin, George Bush's pal, and winner of Time Magazine's 'Man Of The Year' for 2007, "has a plan for mass producing reactors, installing them on barges and selling them around the world as floating nuclear power plants!"[108]

BRILLIANT!!

Please let me have a Guinness to soften my brain further, and make this nightmare unreal, somehow. . . might I just drift away into the slithery mist?. . . and accidentally bonk into one of these Putinated mobile Chernobyls!? . . . . .

Ex-Russian President and ex-KGB chief Vladimir Putin, who wants to mass produce floating nuclear reactors to be deployed all about the world.

. . . I thought that was the worst foolish arrogantly concocted idea that could possibly actually occur, until I just read about the Toshiba mini-nuclear plants that this company wants to sell everywhere and anywhere. That will be fully automated, and need no monitoring, and maybe even no guarding. . . ? . . . Room sized, the contraptions could be buried in the ground, and electrify 'an apartment complex for the rich' with 'steady power' "for up to 40 years."[109]

For the theoretical bargain price of perhaps $3.5 million you could have a 200 kilowatt reactor right beside your house or business. That's equal to about 1/5000th the power of a typical 1000 megawatt commercial nuclear reactor. If Toshiba can have its way, these devices will crop up all over the world, for all sorts of dream profits.

Alas, they will still be powered by the fissioning of uranium, produce the same ultimately toxic, greater-than-500-in-number radionuclides, that our supposedly closely guarded, monitored 104 commercial nuclear plants produce. Could these weenier nuclear reactors leak? Or explode? And contaminate a city like yours forever?

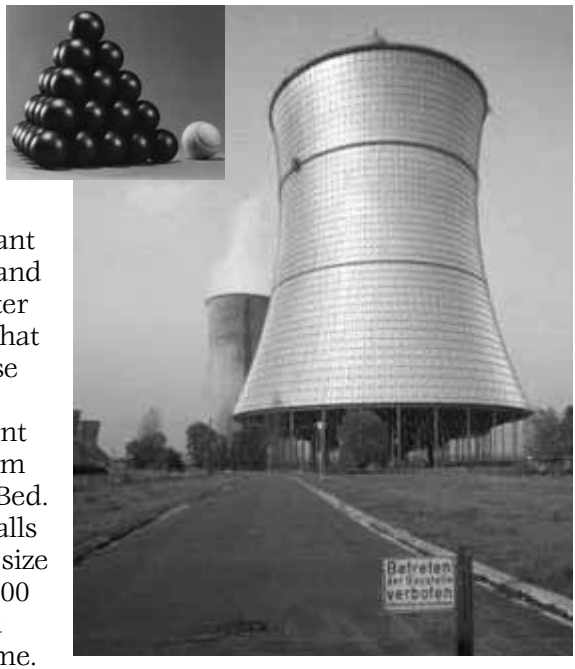
Of course!

Toshiba initially optimistically fantasized that their mini-nukes would be first sold to a buyer in Japan in 2008. However, latest news is that the things are not quite ready. But by 2010, WATCH OUT![110] Some rich unconscious individual or corporation might try to site Toshiba's mini-nuclear reactor too close to you or someone you love.

You might want to know that Toshiba bought up what is now *its* Westinghouse nuclear-plant-making subsidiary from British Nuclear Fuels, Ltd., in October 2006 'for about 5.4 billion dollars.'[111] Westinghouse and General Electric have historically been the two main USA producers of nuclear power plants.

According to Ace Hoffman, outside of its laptop computers, camcorders, telephone systems, DVD players, etc., 'nuclear reactors and equipment for those reactors (and for other reactors) accounts for about 25% of Toshiba's business.'[112] He recommends boycotting buying all Toshiba products to send this company a bottom-line survival-oriented message.

As ridiculous as this all probably sounds to many of you, there also has been some talk festering about 110 megawatt Pebble Bed nuclear reactors, which, naturally, are claimed to be 'inher-



Hamm Pebble Bed Reactor, in Germany. The four year most prominent experiment at deploying this type of nuclear plant ended in disgrace and contamination after it was discovered that a radiation release blamed on the Chernobyl accident actually came from the Hamm Pebble Bed. Top inset of fuel balls or 'pebbles,' each ~size of a lemon - 320,000 bobbing around reactor at any 1 time.

ently safe,' and need no evacuation zone around them - - just in case there *could* be an accident. . .

These gum-ball-machine type of reactors have been around for a few decades, and have not proven to be either safe or economically viable. There's a seven page section on them in the Appendix. The most prominent attempt at running these reactors occurred over a four year failure-of-a-period in Hamm, Germany that was terminated in 1988.

As with so many nuclear calamities, when the plant accidentally [?] released a serious amount of radiation at the same time that the Chernobyl accident occurred over in the Ukraine in 1986, the owners of

the plant lied about what happened. Instead of owning up about the magnitude of their own release, they claimed whatever was being measured by various agencies and individuals all came from Chernobyl's radioactive drift and fallout. When it was discovered that 70% of the radioactivity in question about the area indeed did come from the Hamm Pebble Bed, the local citizenry became incensed. Two years later, the reactor was closed forever.[113]

By the way, weren't we frightened about the danger of 'dirty bombs?' Which are conventional explosive devices having nuclear materials imbedded in them. That can then contaminate our cities for hundreds and thousands of years, with just one bomb's ignition. Build those Toshiba mini-reactors and floating Mobile Chernobyls! Those killing reprocessing plants, and fast breeders IMMEDIATELY! More nuclear material to poison us, more plutonium and cesium and strontium to be made available, that shifty shysters can sell on the black market in G-8 nations, like Russia, or maybe even in the old USA....

Just BRILLIANT!!

And why not nuclear bunker busters that we can dare to USE finally against non-nuclear nations!? Initially we were bold enough to concoct them to be 1/5th the strength of the atomic bombs

dropped on Hiroshima and Nagasaki. But why stop there?! We were about to make them any strength we wished!

Who cared that the fallout from them can drift all around the planet, coming to rest in our food and our bodies, killing innocent people, including even us Americans? [So far, funding for these bunker busters is being denied.]

And we can save the world with nuclear power because it will reduce global warming. That is the latest faux-pas reason to re-ignite the nuclear industry. The Bush administration has been shying away from accepting that global warming exists. But just in case the media finally airs a fair debate of the possibility. . . Al Gore DID win an Oscar from Hollywood for his movie about it with all those facts and graphs - - we have the same media helping us omit the adverse killing health effects of nuclear power and nuclear waste. The frightening un-greenness of it is not being reported.

Could Americans know that our uranium "enrichment facility at Paducah, Kentucky requires the electrical output of two 1000-megawatt coal-fired plants, which emit large quantities of carbon dioxide, the gas [purportedly] responsible for 50 per cent of global warming."

"Also, this enrichment facility and another at Portsmouth, Ohio, release from leaky pipes 93 per cent of the chlorofluorocarbon gas (CFC's) emitted yearly in the U.S. The production and release of CFC gas is now banned internationally by the Montreal Protocol because it is the main culprit responsible for stratospheric ozone depletion. But CFC is also a global warmer, 10,000 to 20,000 times more potent than carbon dioxide."[114]

"In fact, the nuclear fuel cycle utilises large quantities of fossil fuel at all of its stages, including the mining and milling of uranium."[115] And what about all the carbon dioxide in the hot exhaust of those thousands upon thousands of trucks, boats, and trains that will be transporting those massive amounts of nuclear waste cross country to maybe Yucca Mountain, in Nevada, or perhaps some other inad-

U.S. uranium enrichment facility at Paducah, Kentucky. Requires two 1000 megawatt coal plants to supply its electricity, producing large quantities of carbon dioxide, our most popularized global warming gas. Paducah and Portsmouth, Ohio plant together also release 93% of USA CFC gases via leakage – CFC's 10 to 20 thousand times more potent as global warmer than carbon dioxide!

equate storage center, for 20,000 to 70,000 shipments, if we DON'T increase our number of nuclear reactors? The number of shipments, and amount of global warming exhaust, being even greater if we build more nuclear plants.

And what about the energy needed to store the radioactive waste for hundreds of THOUSANDS of years, wherever it may be placed?

About 35% of our nuclear plants pull more than a BILLION gallons of water from some river, ocean or sound into their 'once-through cooling systems' every day, and send the same amount of water back out. But this discharged water often is up to 25 degrees hotter than when it came into the reactor.[116] How does this affect the lives of the fish, plants, and people that depend on this body of water? What if this water somehow is contaminated with tritium or any of the 500-plus radionuclides that might leak into the plant's vessels or pipes? What about the contamination from venting plant vapors into the air? Why aren't these outgoing waters and ventings monitored precisely the way they should be, for each radionuclide possible, every single day, in a proper accurate reproducible manner?

Reportedly, there is an operator-dependent

non-standardized computerized detection-print-out produced at many of our nuclear plants on varied schedules to show what radionuclide concentrations should be flowing out into the nuclear plants' surrounding environments. Although it is known that this is done in a debateably reliable manner all too often, or not done properly all the time, the NRC allows such computer 'monitoring' to continue as if it were entirely acceptable.[117]

Is it just too 'impractical' to actually accurately measure the level of each and every radionuclide being discharged from a nuclear plant?

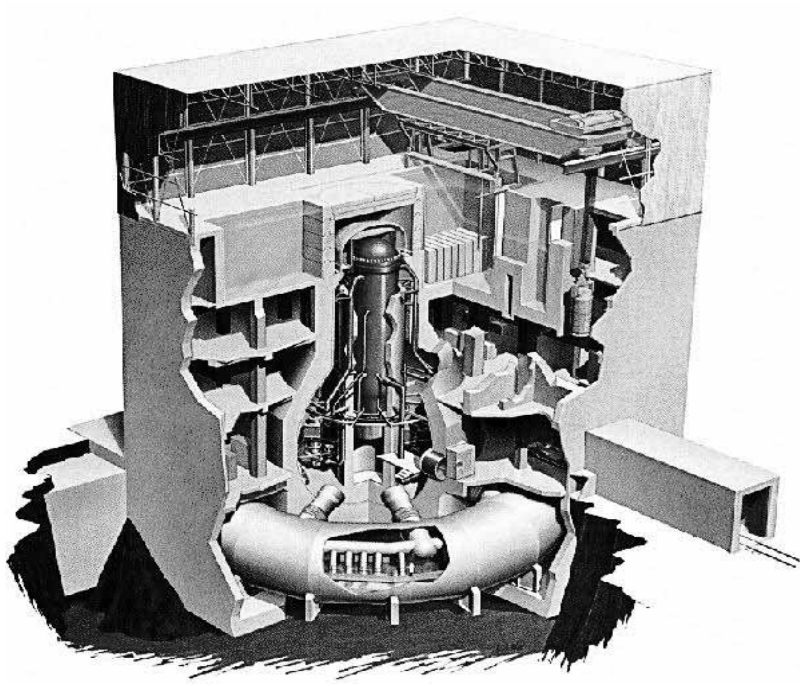
But isn't that what should be done if we want

to do things right? Just because it's nuclear power, and it's so expensive and complicated because of the vast possibilities of contamination, is that an excuse to turn a blind eye, and get a cancered lung or a stillborn baby?

As a physician, I cannot accept ignoring this technology's toxic effects. There is five times more plutonium, for example, in the poorly secured spent fuel pools beside, and ABOVE, the containment structures of our nuclear reactors, than are inside their containment structures. 35% of our reactors are of the boiling water variety, with only sheet metal actually covering the pools situated six to ten stories above ground level (see image on opposite page) - while the pools' walls have a 'blow-out' design in case of increased pressure. What if a terrorist attempts to crash a Cessna into the reactor roof, or an accident occurs that could contaminate vast areas of our nation for incomprehensible periods of time?

Yet there are radioactive spills and leaks like those that poisoned Godley, Illinois' waters occurring at way too many of our other nuclear facilities, all across our great country. Just as it happened in Godley though, how many of those are ever reported? or reported honestly and faith-

fully to the surrounding community? Godley's parent nuclear corporation, Exelon, did not admit publicly to spills occurring as far back as 1996 until 2005! Perhaps that is why our most nuclear state, Illinois, with its eleven nuclear power plants - - equal to a little more than half the nuclear power capacity of the entire United Kingdom [with 20 nuclear plants] - - passed a Nuclear Release Notice Act in 2006. The very first legis-



Cut-away diagram of a boiling water nuclear reactor (35% of USA reactors). Note containment around functional core/reactor essentials > > center/lower left; and barge-like structure which is the spent fuel pool, top right, under only sheet metal roof, very vulnerable to plane crash, bazooka/missile attack, or steam explosion/accident of core itself.

lation of its kind in the USA, the act mandates reporting to the Illinois Environmental Protection Agency (IEPA) and Emergency Management Agency (IEMA) "the detection and reporting of unpermitted releases of "radionuclides" (instead of "contaminants" including radionuclides) into groundwater, surface water, or soil at nuclear power plants...Requires the owners of a nuclear power plant to notify the (IEPA) and the (IEMA) within 24 hours of an unpermitted release. Provides that the quarterly inspections shall be by both IEPA and IEMA."[118]

According to various sources in Illinois, Exelon may have reported a few "unplanned releases" of "contaminants" to the NRC in a very untimely manner over the past several years, and certainly not within 24 hours. Yet the NRC did not do its duty to promptly notify the citizenry immediately thereafter. Thus, the state of Illinois took matters into its own hands and produced this very important landmark legislation.

To take the impetus for better protection against radioactive contamination one step further, Will County (where Godley is located) Board Chairman Jim Moustis requested "a review of all laws governing the Nuclear Regulatory Commission."[119]

Presidential candidate Barack Obama, who happens to be the junior Senator from Illinois, cosponsored a similar Nuclear Release Notice bill in the U.S. Senate to require immediate reporting of "unplanned releases of fission products and radioactive substances…to the NRC and the State and county in which the facility is located."[120] However, politics seeped into the attempts at passing the Senate bill. Politics and money.

Exelon Corporation, the USA's 'largest nuclear plant operator…based in Illinois,' indeed the

operator of the Braidwood reactor in Godley, via its executives and employees, has given at least $227,000 to the Obama presidential campaign. 'Two top Exelon officials, Frank M. Clark, executive vice president, and John W. Rogers Jr., a director, are among his [Barack Obama's] largest fund raisers.' Exelon's chairman, John W. Rowe, 'another Obama donor…also is chairman of the Nuclear Energy Institute (NEI), the nuclear power industry's lobbying group, based in Washington.' Plus, David Axelrod, 'Obama's chief political strategist…has worked as a consultant to Exelon.'

Would it be any wonder then that the Senate bill eventually became watered down to only require voluntary reporting of leaks? '"Senator Obama's staff was sending us copies of the bill to review, and we could see it weakening with each successive draft," said Joe Cosgrove, a park district director in Will County, Ill.' reported the New York Times on its front page on February 3, 2008.[121]

So, for 2008, the Senate bill for immediate reporting of nuclear 'releases' is dead. Both Hillary Clinton and Barack Obama say nuclear power has to be part of the overall energy solution that our country has to create for the future. And John McCain, the Republican presidential candidate with

the *zero* environmental score from the League of Conservation Voters, is totally gung-ho for nuclear power. He thinks the USA should go 80% nuclear power, like the French[122], to generate our electricity. Oh, he also favors reprocessing, like the French.

But does he, or the Democratic candidates, know that 'less than 31 percent of the French public favor nuclear energy as a response to today's energy crisis. 54 percent are now opposed to investing 3 billion euros in the construction of a new reactor, while 84 percent favor the development of renewable energy'…?[123]

Besides all the usual worries about still being unable to safely dispose of radioactive wastes, and reprocessing wastes having 'a greater radioactivity per unit mass'[124] as compared to so-called 'depleted uranium' that results from uranium enrichment, perhaps the French are very aware that 'the only nuclear plant being built in the West that is well along in its construction' is being done so with 'a turnkey contract with Finland by AREVA.' AREVA is a nuclear company 85% owned by the French government which has agreed 'to absorb all costs more than 3.2 billion euros'[125] accumulating for the Finnish project.

In plain French (translated into English for

you) that means that the current cost of the Finnish reactor that 'has now escalated to 4.5 billion euros'[126] will be at least 1.3 billion euros more than the turnkey contract limit, and the French taxpayers will have to pick up most of the bill for the excess cost overrun, which may continue escalating before the reactor might be completed.

Even if the USA makes the foolish move to Go Nuclear! building as many new nuclear plants as possible, the first one won't go online until 2015. By then it has been estimated solar energy could be available at 5-10 cents per kilowatt hour. And the real cost of nuclear energy, borrowed or subsidized, would still be between 14 and 19.75 cents per kilowatt hour.[127]

For the suddenly fawning Francophile who wants to power the world with nuclear, despite its health and anti-economic effects, please read what renowned engineer and nuclear expert Arjun Makhijani states in his 'France's Nuclear Fix?' article published in January 2008:

> 'The French model of imposing added costs on its ratepayers and taxpayers, of polluting the oceans in the face of protests from neighboring governments, and of accumulating vast amounts of domestic and foreign surplus plutonium hardly seems like a model for the United States or anyone else to follow.'[128]

Though we may be lost in our own nightmare on this side of the Atlantic, thanks to our past three decades of energy misguidance, Americans should know that the European Union (EU) expects 20 percent of its electricity to be generated by renewable energy by 2020. This does not include nuclear power. Nuclear power is not a source of renewable energy. Not in the EU's eyes, nor in the eyes of anyone who realizes uranium is not a renewable resource.

Spain has advanced so far as to hope 'to generate almost 30 percent' of its electricity from renewable sources by 2010. Although they are number two in Europe (behind Germany) with over 15,000 megawatts of windpower on line[129], Spain is 'also pushing solar energy, removing obstacles to connecting renewables to the electricity grid [created] three years ago and recently requiring all new and renovated buildings to use solar power for part of their energy.'[130]

From various angles then, we know that solar and wind technologies especially can indeed supplant nuclear power in our energy blueprint for the very immediate future. Especially if we smartly generously spend our government funds to assist their rapid development, rather than wasting it on the nuclear option.

We should be watchful that we are not hoodwinked to become the world's dumping ground for nuclear waste. Thanks to the Bush, and perhaps McCain, administration(s)'s nuclear manipulations, we could undergo a 'deja-vu all over again' Yogi Berra experience that almost happened in the early 1990's. That was when 'our' NRC facilitated designating so-called 'low level radioactive wastes' as 'Below Regulatory Concern' (BRC) so they could be discharged into our community dumps unmonitored. This would have included radioactive pipings, resins, liquids, etc., from nuclear power plants contaminated with untabulated radionuclides – which could have meant any and all of those 500-plus radioactive elements from plutonium to strontium in whatever amounts we would have never known that were generated in the fission of uranium.

However, citizen outrage, thanks to national media debate on this issue, soundly defeated the measure back then. Alas, as Yogi Berra also says: "It's never over 'til it's over." See Chapter Five to discover the latest attempted travesty to discard radioactive wastes improperly, unmonitored, once again. The most outrageous volley apparently to be 20,000 tons of Italy's radioactive waste

- - to arrive by ship from a country that closed off its nuclear power program in 1990, following the Chernobyl accident. (Plus perhaps additional nuclear waste may be coming from England, negotiated by the EnergySolutions corporation.)

Before we fly into the skies to unmask the deception of 'missile defense,' which really is a Trojan Horse for missile offense, and the introduction of nuclear weaponry into space - - which violates many treaties near and dear to those who wish mankind to survive a bit longer on our humble planet - - let's now go to the biggest chapter in the book. On your food, what is good, what is bad, how our corporations want to adulterate it and irradiate it, plus how you can safely feed your family in this time of corporate control of our diet and our consciousness.