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#221 - As The Bill For Nuclear Power Comes Due
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Whether you favor the Gulf War or not, you should know that President Bush and his friends are using it as a smoke screen to cover anti- environmental policies they are pushing on the home front. For example, the U.S. Environmental Protection Agency (EPA) announced Jan. 26 (NY TIMES, pg. 11) that toxic chemicals and radioactivity entering the environment will now get reduced attention from the agency.

Mr. Bush's 1991 energy plan calls for fast-track licensing of more nuclear power plants accompanied by new limits on public comment on the siting of radioactive waste dumps. (NY TIMES Feb. 9, pg. 41). For its part, the nuclear industry is using the Gulf War to try to frighten us all into believing we need more nuclear power plants because our foreign oil supplies are "dangerously unpredictable."

Unfortunately, nuclear power isn't a good answer to our need to get loose from our Middle East oil dependency. For all its chrome-plated promise, nuclear power has fallen flat on its face--and the worst is yet to come. Nuclear power plants are now facing a challenge that their designers never anticipated, though they should have--what to do with the power plants after their useful lives are over.

Nuclear power plants last 30 years or less. After 30 years, a reactor's pressure vessel becomes brittle and subject to breakage, simply as a result of constant bombardment by nuclear particles. In addition, after 30 years or so, the radioactivity in pipes and valves has accumulated to a point where maintenance workers are receiving unacceptable doses of radioactivity, so more maintenance crews must come in (to reduce the time any one worker spends getting zapped), which makes maintenance expensive.

Old nuclear plants cannot simply be abandoned, or demolished with a wrecking ball. They are full of radioactivity, all of which must be kept away from living things. Much of the radioactivity decays away within 50 years, but three million years must pass before a nuclear plant becomes no more radioactive than the original uranium that initially fueled it. Managing a defunct nuclear reactor, and its associated load of radioactivity, is called "decommissioning" it.

At the end of 30 years (or less), there are three choices for decommissioning a defunct reactor: (a) dismantle it and ship it to a radioactive waste dump; (b) mothball it for 30 to 50 years while its worst radioactivity decays, then dismantle it and ship it to a dump somewhere; (c) weld its doors shut, "permanently" entomb it in concrete, and walk away.

This last option is no longer considered a real possibility because nuclear engineers have figured out that normal weathering processes will destroy the "tomb" long before the radioactivity inside has decayed away to harmless levels. Therefore, simply "entombing" a reactor is not acceptable from a public health perspective.

This leaves only two choices. Unfortunately, the first choice--dismantle it and ship it to a dump somewhere--assumes that an appropriate dump exists. However, after 50 years of trying to figure out what to do with radioactive wastes, our government and its friends in the nuclear industry still have no real plan for safely managing radioactive wastes. There are plans underway to dig exploratory holes in the ground in Nevada, Washington state, and Texas (and Uncle Sam is already digging a giant hole in the ground in New Mexico, all the while protesting that this hole is not intended for decommissioned reactors), but at each of these locations unexpected problems have come to light, and there are groups of scientists at each location who have good reasons for believing that each place is unsafe for storing radioactive garbage for hundreds of thousands of years--something humans have never tried to do before.

Therefore, there is only one remaining solution to this problem, and it really is a temporary fix at best: weld the doors shut, encase the place in concrete or steel, put up huge skull-and-crossbones signs to try to scare curious children away, and settle back to wait while Uncle Sam comes up with a solution to the radioactive waste problem. This, of course, has the added benefit of passing all the major costs along to our children or grandchildren. Current estimates are that decommissioning a reactor will cost anywhere from $100 million to one billion dollars per reactor. Since initial estimates for the cost of building reactors were low by at least 1000%, we should probably take these first decommissioning estimates as optimistic best guesses, likely to turn out to be sadly low.

In the U.S., four small commercial reactors are waiting to be "decommissioned" now. During the next 18 years, an additional 67 large nuclear reactors will need to be decommissioned. Worldwide, more than a dozen reactors have already been shut down and are awaiting decommissioning; 66 more will retire by the year 2000, and an additional 162 will need to be decommissioned by 2010. The problem is growing.

In the meantime, we must not create any more of these deadly, expensive hulks. U.S. taxpayers sunk $70 billion in subsidies into the development of nuclear power technology; electric utilities invested an additional $125 billion, which is more than the cost of the entire space program or the war in Vietnam. Our commitment to nuclear power has slowed the search for real solutions to our energy problems because dollars spent on nuclear plants are not available for finding real solutions--like weatherizing buildings or making efficient cars. Past investments in nuclear power are one major reason why we're still hooked on Middle East oil today. Our enormous investment in nuclear power has yielded reactors which in general cost less to write off after they are built than they cost to operate, and which collectively today deliver to the country about half as much energy as wood. So far the damage bill is about $200 billion and the bills still to be paid for cleaning up the mess--decommissioning, waste disposal, uranium mine and mill leftovers, etc.-will probably cost about as much as has been invested already, assuming we can find technically and politically acceptable ways to do these jobs at all.[1]

The national commitment to nuclear power is the greatest industrial disaster ever suffered in our history. (And now the same people who brought us nuclear power are doing their best to scare us into buying municipal solid waste incinerators--another disastrous technology from every perspective.) To let Saddam Hussein frighten us into further massive investments in these failed technologies would be to hand this twobit dictator a real long-term victory. But that's precisely what George Bush's 1991 energy plan says the President is bent on doing. Will we never learn?

--Peter Montague

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[1] Much of this paragraph is taken from Amory B. Lovins, "The Origins of the Nuclear Power Fiasco," in John Byrne and Daniel Rich, editors, THE POLITICS OF ENERGY RESEARCH AND DEVELOPMENT; ENERGY POLICY STUDIES VOL. 3 (New Brunswick, NJ: Transaction Books, 1986), pgs. 7-34."

Get: Cynthia Pollock, DECOMMISSIONING: NUCLEAR POWER'S MISSING LINK (Washington, DC: Worldwatch Institute [1776 Massachusetts Ave., NW, Washington, DC 20036; phone (202) 452-1999], 1986). $4.00.

[Diagram has been removed. "Dangerously Unpredictable." Source: U.S. Council for Energy Awareness.]

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