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The Nuclear Imbroglia

by

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Nuclear power-- top priority or last resort Clearly there must be compelling arguments if either of these avenues is chosen The arguments for and against nuclear power are well known to this audience As to which arguments are compelling will depend in large measure on individual perceptions interpreted or shaped by past experience and personal philosophy influence in turn by peers views education occupational experience etc

Arguments against nuclear power have traditionally focused on potentially intolerable social environmental and ecological costs associated with the proliferation of nuclear weapons catastrophic reactor accidents and failures in the waste management program. The nuclear industry used to argue that nuclear was cheap clean and safe Now the industry is admitting that there are unresolved safety problems and economic woes but that nuclear should be a top priority program on the basis of high energy growth projections What you should appreciate is that the keystone to this argument the growth projections are being treated by others as being unrealistic unobtainable and undesirable Unrealistic-- the Institute for Energy Analysis for example is currently projecting 100 and 126 quads as low and high energy demand estimates for the year 2000-- a range that coincides with the Ford Foundation's Energy Policy Project's zero growth and technical fix scenarios but for different reasons Unobtainable and Undesirable--

Frank von Hippel and Bob Williams at Princeton demonstrated in a forthcoming article in the Bulletin of the Atomic Scientists for example that ERDA's 1976 Nuclear power growth projections 450 to 800 GWE by 2000 for the combination of all technologies and intensive electrification scenarios are unrealistically high and based on an assumed pattern of energy growth that is both economically wasteful and potentially dangerous to both the global environment and international stability Nuclear energy is not essential under low growth scenarios which I believe can be achieved with realistic energy conservation programs Consequently a major commitment to fission power and a plutonium economy can and should be postponed for as long as possible

The low-growth advocates share a strong belief in a new scarcity of physical resources waste-absorbing capacity of the environment and resilience of planetary life-support systems -- qualitatively different from the scarcity problems solved by modern industrial production It is a view that growth in U S energy demand beyond about 100-150 quad will in all probability place severe strains on our environment and social structure regardless of what mix of alternative technologies we choose This view is based on assumptions such as

- Dependence on foreign oil import for a significant fraction of the nation's energy supply involves serious

economic and political problems Burning up domestic resources faster to achieve energy independence at present consumption rates steals from future generations (Strength through exhaustion the policy has been called)

The commitment to a long-term fossil fuel economy only several fold larger than today s makes the doubling of the global CO₂ concentration in the next half century inevitable, with the potential risk that this will be followed by substantial and perhaps irreversible changes in global climate

• Nuclear power involves problems of public acceptance that are far from resolution and perhaps impossible to resolve Of utmost concern to me is the belief that commitment to nuclear is a commitment to a worldwide plutonium economy and a commitment to nuclear weapons proliferation As Commissioner Gilinsky recently noted There is no escape from the fact that any nation with a store of separated plutonium is a nation with a nuclear weapon option-- an option that can be picked up on short notice Nuclear disarmament will be impossible in a world of plutonium breeders nuclear proliferation will be inevitable I cannot think of a more compelling argument for treating nuclear power as a last resort technology than the sobering thought of a worldwide breeder reactor economy

Thus it is prudent to shift as far and as rapidly as possible in the direction of husbanding energy resources through energy conservation This dictates substantial improvements in energy efficiency our most underrated energy resource For example reduce the use of high quality energy (e g electricity for end uses that do not demand it such as for the production of low temperature heat) It requires the removal

of institutional barriers to energy conservation increases in the use of appropriate or what Amory Lovins terms soft technologies. These are generally renewable, diverse, not centralized, flexible, matched in scale to end-use needs. This shift in priorities will reduce the need for large energy projects that are likely to be subject to delays, increasing costs, and cancellations that will escalate protests over safety, environmental and social impacts and priorities, and legal liabilities, and that are likely to increase problems associated with the difficulties in obtaining investment capital. The Third world is likely to achieve greater benefits from the export of soft, appropriate and diverse technologies rather than high, centralized technologies such as nuclear. The determination of some developing countries to bring about a redistribution in use of the earth's resources provides yet another reason for reduction of energy demand by the industrialized nations and for development of energy-frugal and materials-frugal technologies.

The issue of which path we should take to which energy future will not be settled in a debate before the AIF. Because of our differences in perspective, it is ridiculous to think I could convince you that your pro-nuclear, high growth, high technology, develop everything alternative carries extraordinary risks and is the wrong path to follow. We will remain unquestionably polarized on this issue.

The nuclear industry is in trouble Cancellations and postponements are outstripping sales Only seven nuclear units were sold in the U S in 1975 The three units ordered in 1976 are really not new business 1976 seems almost certainly to be essentially a no-order year No orders are anticipated before the latter part of 1977 Were it not for NRC s withdrawal of its General Statement of Policy on the Vermont Yankee waste issue there would be a temporary moratorium on new reactor licenses The environmentalists will continue their court fight on this issue There is a court-ordered ban on the licensing of reprocessing plants and related plutonium facilities Environmentalists have begun to challenge applications for export licenses There is a de facto nuclear moratorium in the U S

On the Hill Senators Pastore and Symington have departed Congress Senators Montoya Buckley and Tunney were defeated There is a move by the democratic caucus to abolish the Joint Committee on Atomic Energy or at a minimum strip it of its legislative powers Two pro-nuclear bills the Energy Independence Act and the Nuclear Fuel Assurance Act died in the 94th Congress a Congress that produced a proliferation of proliferation bills

In the Executive Branch President Ford a strong nuclear industry ally has been defeated by President-elect Carter who advocates continued use of atomic power only as a last resort Nuclear proliferation was an issue in the presidential debates

Neither candidate spoke favorably about plutonium-recycle

President Ford has announced that plutonium recycle is no longer considered necessary and inevitable and apparently backed away somewhat from the idea of demonstrating reprocessing and plutonium recycle. The Administration's new anti-proliferation strategy states that the avoidance of proliferation henceforth "must take precedence over economic and energy benefits. It tells the world that reprocessing should not proceed unless there is sound reasoning to conclude that the world community can effectively overcome the associated risks of proliferation -- something many experts consider an insoluble problem. President-elect Carter's proposed nuclear proliferation controls are even stronger than Ford's. In the campaign Carter charged that Ford's plan only thinly disguises Ford's interest in a massive aid program from plutonium reprocessing on a so-called evaluation basis.

At the state level it would appear on the surface that the industry is fairing somewhat better with the defeat of the anti-nuclear initiatives. However, the anti-nuclear initiatives were holding their own in the polls until the last minute media blitzes and the massive infusion of money into the campaign by the industry. Still the anti-nuclear initiatives were getting one-third of the vote, a solid popular base. All in all, considering the public concern over the energy crisis, the history of pro-nuclear boosterism by the government, the

level of debate and the massive infusion of money into the campaign by the nuclear industry one-third is probably not bad for the first round California rejected Proposition 15 only after approving conditioning future nuclear development upon approval by the state legislature We are now being told that Proposition 15 is alive and well in Sacramento home of the California Energy Resources Conservation and Development Commission In Missouri citizens have voted to exclude construction work in progress from the utility rate base

The anti-nuclear movement abroad is growing exponentially Twenty-five thousand demonstrators at the Brokdorf nuclear plant in Germany waged an eight hour war with German police last weekend Thousands of Frenchmen have demonstrated at Creys-Malville the site of the Super-Phenix Five thousand demonstrated at Barsebaeck in Sweden More than 10 thousand demonstrated at Spain's fuel fabrication plant west of Madrid Some four thousand French scientists and engineers signed a petition protesting their government's nuclear policy Although he has since backed down the new Prime Minister of Sweden was elected on an anti-nuclear platform pledging that he would never compromise on his demands that Swedish reactors be phased out and that no new reactors would become radioactive

As we step through the nuclear fuel cycle here at home we see Westinghouse after sweetening its reactor sales with very favorable uranium guarantees is being sued by its

customers for breach of contract This two billion dollar fiasco has coined the phrase "you can't be sure if it's Westinghouse

Private enrichment in the U S appears to be dead Uranium Enrichment Associates is reappraising its uranium enrichment venture

The HTGR is going under Plant factors are down reactor safety concerns are up Remember Browns Ferry There are continuing defections from the industry and regulatory ranks First the three GE engineers then Bob Pollard resigned from the NRC early last year Now Ronald Fluegge a nuclear reactor engineer has left the NRC accusing it of violating the public trust suppressing technical concerns and jeopardizing the lives of tens of thousands of people who live in the vicinity of each operating PWR. Following this latest resignation Ben Rouche has sent a list of 15 unresolved safety issues to the ACRS

In the wake of the recent Vermont Yankee decision by the NRC Wall Street investment analysts such as Jesup and Lamont and E F Hutton are reassessing investments with large financial exposure to nuclear power Utility executives are publicly recommending against contracting for further nuclear plants because of today's climate

Nuclear Fuel Services has notified its customers that it is quitting the spent fuel reprocessing business stating in court documents that it is uneconomical for NFS and its customers

In preparing the Fri Report the EPA CEQ and ACDA signaled that they join the arms-control experts environmentalists and apparently President-elect Carter in opposing nuclear fuel reprocessing and plutonium recycle

ERDA has taken over the transportation of all its shipments of strategic quantities of Special Nuclear Materials In an effort to protect its plutonium from terrorists ERDA is turnings its facilities into armed camps providing the guard force with automatic weapons flak jackets gas masks and armored personnel carriers armed with thirty caliber machine guns Are the utilities ready for this? Are you ready for a socialized nuclear fuel cycle? In the Fri Report the option preferred by ERDA and the State Department called for government takeover of the entire plutonium industry

While the nuclear industry continues to claim that disposal of radioactive wastes is a simple problem after 30 years the public is confronted by the realities of the tanks of liquid waste at Hanford Savannah and West Valley NFS was required to set aside \$2 million to dispose of its high level waste The NRC now estimates that it may cost up to \$540 million to prepare these wastes for burial in the non-existent Federal Repository Meanwhile low-level wastes are leaking off-site and being removed by thieves from commercial burial grounds Kentucky has placed a tax of 10 cents per pound on nuclear waste disposal

In a draft report prepared for ERDA Mason Willrich concluded Radioactive waste poses an existing and permanent

challenge to government "The basic goals of U S radioactive waste policy are unclear The existing organization for radioactive waste management will be unworkable if left unchanged The existing framework for radioactive waste regulation will be ineffective if left unchanged

The LMFBR program takes two steps backward for each step forward The CRBR licensing continues to be delayed and must face another Congressional battle for funding next spring President-elect Carter has said that our excessive emphasis on this [the LMFBR] project should be severely reduced and converted to a long-term possibly multi-national effort The GAO has just released a report highly critical of the U S breeder program. France s Phenix reactor will be off-line for several months because of leaks in the intermediate heat exchangers The Super-Phenix is being delayed The British Royal Commission on Environmental Pollution has recommended that development of Britain s first commercial fast breeder reactor be delayed to permit further investigation of the risks of a plutonium economy

The Mancuso study which implicitly argues for tighter radiation protection standards may spell trouble for the entire nuclear industry

All the news is not bad news but clearly these are symptoms of a very sick industry that is increasingly losing public support In fact you are being kept alive by the stored fat of back orders

Your adversaries have two immediate priorities (1) postpone any major commitment to fission power-- particularly the plutonium economy and (2) implement a strong energy conservation program With respect to both of these I believe the handwriting is on the wall the political decision has been made We are not going to have a plutonium economy we are going to have energy conservation It is time for you as an industry to consider moving away from your pole in the nuclear debate It is time for you to accept this decision Plutonium is marginally economical at best and more probably uneconomical The only real incentive for plutonium recycle is to clear the decks for the breeder another very sick nuclear program. Plutonium recycle and the breeder are the linchpins of the long term commitment to nuclear power If you continue to cling to these programs you will have to fight not just the anti-nuclear low-growth advocates but a coalition of environmentalists arms control experts civil libertarians church groups and elements on the Hill and in the Carter administrations This will be a very costly battle and not in the national interest and judged objectively not even in your own immediate interest

For the past four years the nuclear industry the big energy corporations and the utility industry have joined with the Administration in giving lip service to energy conservation our most neglected energy resource You say it is not a significant resource Well it is incumbent on you to demonstrate that you have tried every path every trick that you have pursued it with the same vigor you claim to have given to reactor safety Let s see some leadership Let s put the national interest ahead of corporate interests Let s see the AIF

members take the lead in demonstrating the achievement of the limits to energy savings that can be achieved in the industrial sector through good house keeping measures Let s hear from the AIF utility members on the potential for steam-electric cogeneration in your own service areas Identify and document all institutional and economic barriers that presently make cogeneration unattractive to the utilities Strong advocates of energy conservation like Bob Williams at Princeton are talking about all electric homes 1500 ft² using annual cycle energy systems requiring only 5-6000 kwh/yr Let s see some real utility leadership in demonstrating new energy saving systems such as these in your own service areas