

EIR Special Report

Reagan's nuclear policy: can the U.S. make it work?

by Vin Berg

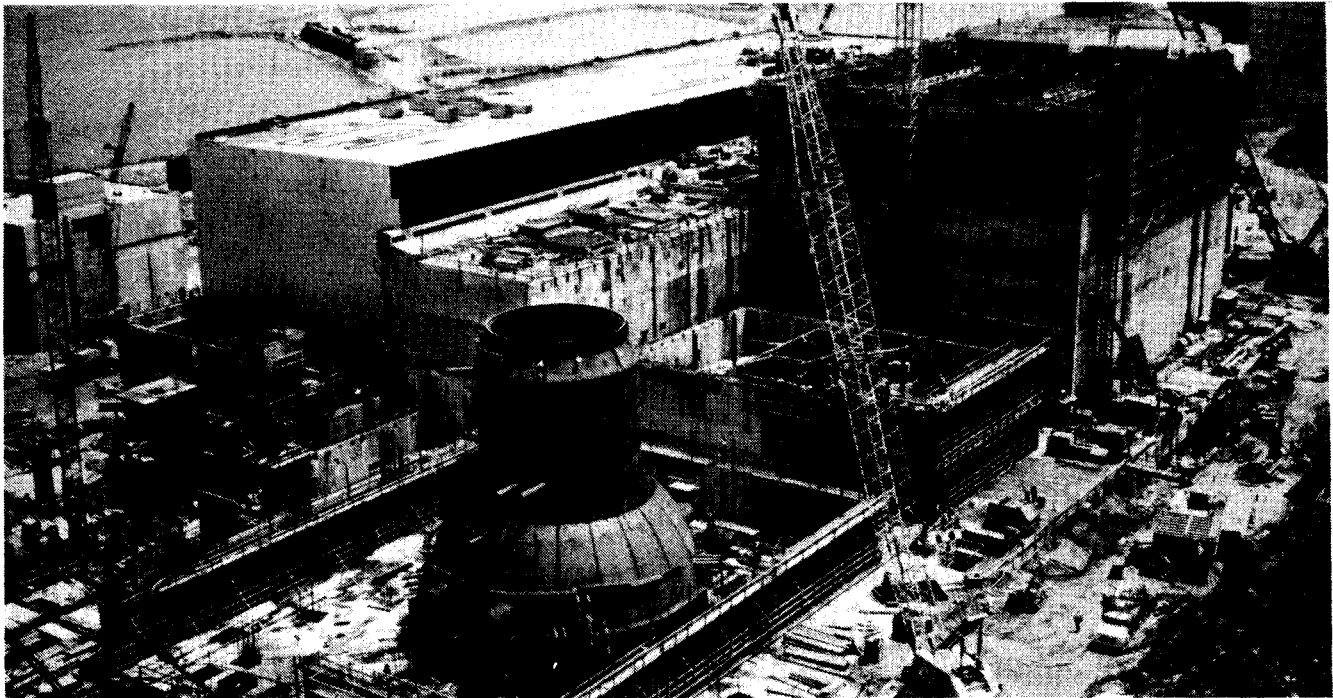
President Ronald Reagan recently appeared on national television to announce a change in the policy pursued by the U.S. government toward nuclear power over the past decade. Whereas the previous administration had placed "regulatory" obstacles in the way of nuclear plant construction and operations, his would act to remove those obstacles. Whereas the previous administration had used "non-proliferation" politics, earning America the reputation of an unreliable and even malevolent trade partner while destroying the export-basis of the American nuclear industry, his would act to promote exports of nuclear technology.

There were, however, two crucial omissions in the President's statement. The first is the urgent and necessary development of thermonuclear fusion power. The second is the matter of financing: there cannot, as we shall prove, be any revival of American nuclear power resources without ending the usury that has swept the land at the instigation of Paul Volcker's Federal Reserve Board.

Despite this, what the President stated as his position on nuclear power Oct. 9 constitutes the first pro-nuclear pronouncement by an American President in 10 years.

The President promised to:

- Expedite current licensing procedures for new plant construction, which have drawn out lead-times from 4 to 6 to a nightmarish 12 to 14 years;
- Speed operating licenses for 33 nuclear plants now nearing completion;
- Proceed with construction of permanent waste-disposal facilities for the 3 percent of spent-fuel that cannot be reprocessed;
- Remove obstacles to closing the nuclear fuel-cycle, lifting previous administrations' ban on commercial reprocessing of spent-fuel, which forced utilities to stockpile the 97 percent of "waste" that can be re-used;
- Create a policy environment encouraging private industry to develop reprocessing technology;
- Continue full government support for the Clinch River, Tennessee, fast-breeder reactor project.



Courtesy of Bechtel

Three Peach Bottom reactors under construction for the Maryland-Pennsylvania-New Jersey region 11 years ago.

Admittedly, the usual ideological crankishness is there—“privatization” of reprocessing is unfeasible, and repeatedly declared so by the companies now engaged and industry specialists generally. Because of the long lead-time, large capital expenditures, and high risk involved, the development of reprocessing of spent nuclear fuel, like any frontier technology, requires “Hamiltonian” government involvement.

Nevertheless, the speech came as a breath of fresh air to the majority of Americans who have never quite followed the logic of “environmentalism” in its opposition to the cheapest, safest, and most environmentally beneficial energy source yet developed.

There are other indications of administration intent. For one, to the discomfiture of zero-growthers in the U.S. Congress, it has been learned that the Department of Energy has been conducting a wide-ranging “propaganda campaign” on behalf of nuclear power since June, at last placing the authority of the government in opposition to anti-nuclear environmentalists, rather than at their disposal.

Export potential

For another, when Spain’s King Juan Carlos visited Washington in mid-October, President Reagan is reported to have personally assured him that the United States intended to become once again a reliable supplier of nuclear fuel. When Vice-President Bush visited Brazil on Oct. 14 and 15, he gave that nation the same assurances. In the meantime, said Bush, the U.S. will not object if the Brazilians go to Europe for fuel,

contrary to the Brazilian contract with Westinghouse, which is the builder of the Brazilian nuclear facility which will come on line in November.

Meanwhile, Mexico has opened bidding for the next 2,300 megawatt plant in their ambitious nuclear program, and General Electric and Westinghouse are good candidates for the August 1982 award. Their principal problem could be lack of U.S. government financial aid. But in that connection, despite Malthusian William Draper, Jr.’s overlordship, there are reports, which *EIR* has been unable to confirm, that the U.S. Export-Import Bank has promised \$600 to \$700 million in financing should either GE or Westinghouse win current contract bidding to construct a fifth nuclear power installation in Taiwan. In light of President Reagan’s close relations with Mexican President López Portillo, the White House might be expected to require that Exim make the same offer for the Mexican case, when bidding opens in February 1982.

This is crucial to the prospects of the nuclear industry. Exports are indispensable to the industry’s health, for without them, the economies of scale implicit in an industry based on large-scale, long-term capital investment might never be realized.

However, there are indications that Secretary of State Alexander Haig is eager to use the exports of nuclear energy technology not for the development of Third World nations, but as a reward, so to speak, for good behavior. On Oct. 19 there was a meeting of the Interagency Task Force on Non-Proliferation to discuss changing the nuclear non-proliferation law. Proposed

changes included removing the Nuclear Regulatory Commission from control over licensing nuclear exports, giving this authority to the State Department, and repealing that part of the law which forbids nuclear exports to nations that are developing nuclear weapons. The State Department is the coordinator of the Inter-agency group.

Whatever the State Department intends shall have to be watched closely. Even so, Mr. Reagan promises to facilitate American nuclear exports.

The breeder issue

Equally crucial is presidential commitment to reprocessing and breeder-reactor development. Because naturally occurring U-235 fissionable isotopes are limited to a few decades' supply, even under minimum expansion-of-capacity conditions, nuclear energy expansion might be contained by the simple expedient of preventing application of fuel-recycling and fuel-generating technologies, including breeder reactors, fusion-fission hybrids of "fuel factory" design, and soon enough, particle-beam isotope-separation systems. That is the expedient adopted by the Carter administration, which annually attempted to cut off (and did significantly curtail) funding for the Clinch River breeder program, and halted operations at the Barnwell, South Carolina reprocessing facilities.

Reprocessing technology can recover and recycle 97 percent of nuclear fuel spent over four-year cycles in reactors. **Waste disposal technology**, including permanent repositories, is tested and proven effective for the remaining 3 percent of spent-fuel constituting "high-level" (highly radioactive) wastes. **Breeder technology**, generating energy as any light- or heavy-water reactor technology does, can simultaneously breed more fuel than is consumed in the course of nuclear-generating operations.

Figure 1
U.S. nuclear power plant status, 1974-81

	Dec. 1974		Sept. 1981	
	Number	MW(e)	Number	MW(e)
Reactors with operating licenses . . .	55	36,552	77	58,180
Reactors with construction permits .	63	63,379	80	88,080
Reactors with limited work authorization . .	2	2,280	2	2,300
Reactors on order	99	111,909	15	17,482
Totals	219	219,130	174	166,042

Source: Atomic Industrial Forum INFO newsletter

By restoring government commitment to these technologies, President Reagan has promised nuclear energy a future. "This is essential to ensure our preparedness for longer-term nuclear power needs," the President stated. "The policies and actions that I am announcing . . . will permit a revitalization of the U.S. industry's efforts to develop nuclear power."

An omission

There remains the matter of fusion energy. Budget-cutting threatens to have a disastrous impact on this research program, of which the President has made no mention.

Using isotopes found in ordinary water and elements as common as lithium for fuel, fusion will be producing virtually unlimited amounts of cheap, clean energy in the next century—and for perhaps millions of years thereafter. From one gallon of water (at isotope-extraction costs of about 10¢), the fusion process can produce the energy equivalent of 300 gallons of gasoline, and would render municipal garbage, ordinary rocks, indeed, whole sections of the Earth's surface vital raw materials through isotope-separation derivatives.

Fusion is an achievable reality by the year 2000. The Soviet Union, mindful of strategic military applications, intends to have beam technology and fusion-fission "fuel factory" hybrid-reactors in the 1990s. Speaking at the Tenth European Physics Society meeting in Moscow in late September, academician E. P. Velikhov announced that as the Soviets continue work on their T-15 magnetic fusion device ("tokamak"), the world's first with superconducting magnets, they will soon begin construction of a more advanced T-14, which will have high enough temperatures, above 44 million degrees, to produce self-sustaining fusion reactions, permitting large-scale fusion energy release. Velikhov, Vice-Chairman of the Soviet Academy of Sciences, declared that *the T-14 will be operable in the late 1980s.*

"These two Soviet devices, taken together, will demonstrate the engineering practicality of fusion before 1990, well ahead of the current U.S. timetable," said Dr. Stephen Dean of Fusion Power Associates.

Japan, too, is on a year-2000 timetable with greater projected spending on fusion at present than the United States.

Because the shift to a fusion power economy, entailing development of several wholly new feeder-industries, has a very large transitional energy requirement, *unmanageable without the entire range of fission technologies*, Carter administration policy on fission power generally precluded the possibility of ever realizing fusion power. That administration expressed this by revising the U.S. timetable for prototype reactor construction from the year-2000 goal to sometime in the middle of the 21st century.

President Reagan has now committed the nation to restoring the basis in fission-power resources for the fusion power age—but he has not committed his administration to fusion power in observance of congressional legislation mandating the year-2000 goal (1980's Magnetic Fusion Energy Engineering Act). Remarkably, under revised budgetary estimates, fusion research under Reagan will receive less funding than it received under Carter—again contrary to spending levels mandated by Congress.

Civilization at stake

No small amount of pressure is being placed on the White House to at least show Mr. Stockman the door when it comes to fusion power budgeting. Indicative was the Oct. 15 speech delivered by the eminent plasma physicist Dr. John H. Nuckolls, of Lawrence Livermore Laboratory, on the occasion of his acceptance of the Maxwell Prize from the American Physical Society. Nuckolls, who led the 1970s effort to initiate inertial confinement (e.g., "laser") fusion research, flatly declared that nothing less than the survival of the human race depends on launching a fusion power development-project that deserves the name "crash program," on the scale of NASA's Apollo moon-shot effort, or the 1940s A-bomb Manhattan Project.

Dr. Nuckolls highlighted the great promise of a variety of lines of research into fusion now under way, and proposed that as part of the pending reorganization of the Department of Energy, magnetic-confinement and inertial-confinement programs be combined. He predicted: "A prototype ICF [inertial-confinement fusion] reactor will be in operation by the turn of the century. . . . The successful development of second generation fusion reactors, economically competitive with Light Water Reactors and High-Temperature Gas-Cooled Reactors for electricity and synfuel production, will signal the dawn of the fusion age. . . . This challenge merits high national priority, and an Apollo-scale commitment of the nation's will and resources."

Nuckolls warned of "geophysical disaster," should some projections for fossil fuel-produced carbon dioxide accumulation in the atmosphere prove true.

Temperature increase, drought, and climatic dislocation are looming sources of holocaust unless it were possible to make mankind's entire energy supply non-fossil in as little as 40 years. But within that timeframe, fast-breeder reactors simply can't produce fission fuel at the required levels. The only alternative is fusion-fission hybrids (of which the earliest projected form is a "super-breeder" or "fuel factory") and hydrogen fuels occurring as byproduct of next-generation fusion reactors.

Nuckolls's demand for a fusion energy "Apollo program" is legitimate, whether some carbon-dioxide-saturation projections are accurate or not. Nuclear

America's foremost regulatory blocks

The principal regulatory obstacles President Reagan has pledged to overcome are these:

Two-stage Licensing: Utilities must apply for two separate licenses from the Nuclear Regulatory Commission, one for construction, and a second for operation of a nuclear plant. All issues of health and safety are reviewed at the construction-licensing stage. And yet, after construction, "intervenor," including any anti-nuclear group, may demand and be granted public appeals hearings to raise the same issues again, including whether demand for electricity justifies operation of the already constructed plant! As an NRC employee described it, the operating license stage is "two years of quibbling." Two proposals are now before the President, one that would empower the NRC to issue operating licenses while hearings are pending or in progress, another which would eliminate hearings on operating licenses altogether.

The Sholly Rule: When environmentalists demanded the right to act as "intervenor" after the NRC amended an operating license to permit release of radioactive gas at Three Mile Island, a federal judge ruled that they had the right to hearings *even if there were no scientific basis for questioning NRC judgment*. Under the Sholly Rule, "anybody at anytime can request a hearing on anything and get it," explains an NRC source. One well-known anybody, Gov. Jerry Brown, used this rule to file suit against the operating of California's Diablo Canyon nuclear plant.

Safety Rules: Nuclear plants are very safe, provided only that established industry standards are met. Yet the NRC has no standard, and "safety rules" have multiplied on the basis of individual NRC engineers' case-by-case judgment or lack thereof. A senior staff member recently warned the commission that "the potential for a negative safety impact caused by the number and scope of requirements has become very real to both the NRC and the nuclear industry. The full significance of the issue may have been underestimated by NRC staff." In short, some "safety" requirements are so disruptive of utilities' established in-plant operating procedures that they produce a potentially hazardous condition where none existed. By establishing formal criteria, inaccessible to frivolous "environmentalist" challenge, the vast number of unnecessary and detrimental safety rules could be eliminated.

expansion must occur worldwide at the rates required to achieve a rate of Third World agro-industrial development that can avert genocidal depopulation. The influential Fusion Energy Foundation has established a minimum-required program of one thousand 1-gigawatt installations in the United States, and U.S. production of a comparable number of 1-gigawatt reactors for export to Africa, Asia, and Latin America by the end of this century.

In the event of even approximate realization of that goal, fuel-expansion requirements prove that fast breeders simply aren't fast enough. Achievable fusion-fission hybrid "fuel factories" (by 1991, says Dr. Edward Teller, seconded by Dr. Hans Bethe) and energy-dense particle-beam isotope-separation technologies are essential to humanity's survival.

Fusion power must be emphasized right now.

It is in this light, perhaps, that one begins to grasp

both the importance of President Reagan's official statement on nuclear energy, and also, the significance of one other crucial matter omitted by the President. This matter was touched upon by Energy Secretary James Edwards during a press briefing following the President's Oct. 9 statement. Can the utilities take advantage of the President's relaxation of red-tape and actually afford to go nuclear? "I think the biggest factor is the interest rates . . . and they have a special problem. Inflation is 10, 11, 12 percent. . . . Interest rates are 20 percent. How can the utilities plan ahead?" said the Secretary.

A status report

Usury has destroyed entire civilizations before. Despite the President's best intentions, Paul Volcker's interest rates have already done more damage to nuclear energy than all four years of Carter environmentalism.

Figure 2

U.S.-built proportion of nuclear power plants in operation, under construction, or on order by principal manufacturers

(As of January 1979)

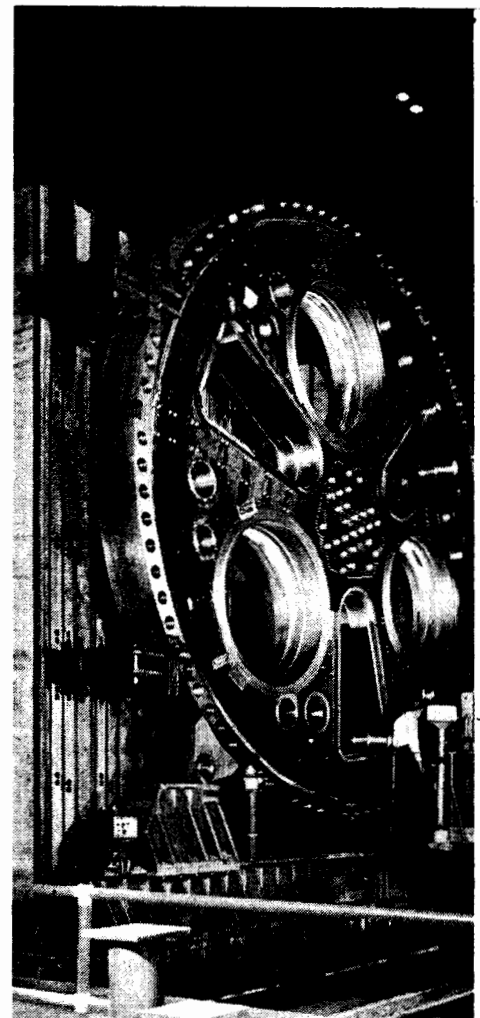
Manufacturer	Nationality	MW(e)	U.S.-produced MW(e)
Westinghouse	U.S.A.		87,059
General Electric	U.S.A.		70,193
U.S.S.R.	U.S.S.R.	45,758	
Kraftwerk Union	W. Germany	36,976	
Framatome*	France	36,324	
Combustion Eng.	U.S.A.		34,206
Babcock & Wilcox	U.S.A.		27,796
AECL	Canada	18,277	
NPC (and predecessors)	U.K.	11,581	
Toshiba†	Japan	8,709	
ASEA ATOM	Sweden	8,280	
MAPI*	Japan	7,869	
Westinghouse (Europe)	Belgium	6,518	
Ansaldo Mecc. Nucleare†	Italy	2,880	
Hitachi†	Japan	2,279	
Elettronucleare italiana*	Italy	2,000	
Other manufacturers		13,787	
U.S. total		219,254	
Total world		420,482**	
As of September 1981		408,098**	208,125*

* Licence Westinghouse.

† Licence General Electric

** Decreases due to cancellations since 1979

Source: *The Necessity for Nuclear Power* by Geoffrey Greenhalgh, London: Graham & Trotman Ltd., 1981



Even as the President spoke, Federal Reserve usury was devastating both America's nuclear industry and its potential as an exporter of nuclear power technologies to a needful world.

Indeed, if the Volcker regimen had been in effect after World War II, neither U.S. fission construction nor fusion research breakthroughs would have occurred.

The choices

"Environmentalist" demonstrations and lawsuits are incidental. Today, nuclear construction is being canceled for primarily financial reasons. Lower-tier utilities have been shut out of the long-term bond market and forced to cancel projects.

Those utilities still enjoying access to the long-term debt markets are paying 17 percent and more for nuclear-construction funds whose investment involves a 12-to-14-year lead-time.

As a result, a 1-gigawatt plant that cost \$200 to \$300 million throughout the 1970s now costs \$2 billion, \$3 billion, as high as \$6 billion. Standard & Poor's and Moody's, the major-investors rating services, have been steadily downgrading nuclear-utility bonds, in effect telling investors and utilities to stay away from nuclear power so long as Paul Volcker has an office in Washington.

In a number of recent cases, underwriters have flatly refused to float bonds needed for construction of nuclear installations already under way.

Last March, Merrill Lynch, the giant investment institution whose pre-government President was Mr. Volcker's ally Treasury Secretary Donald Regan, sealed the fate of some 18 nuclear projects by issuing a report to investors recommending their cancellation.

Over the last five years, a total of 80 nuclear installations have been deferred or canceled in the United States. *Since Paul Volcker made usury the law in October 1979, not a single nuclear plant has been started, and no utility company has planned a new unit anytime anywhere.*

After President Reagan's statement, one Wall Street utility analyst commented that the President might have the power to expedite plant operations for those now nearing completion. But what value have expedited construction-permit procedures for new plants when, in 1981, not a single utility has requested a plant construction-permit? They cannot afford them.

Mr. Reagan's nuclear policy can be made to work, provided there is export-financing, and provided his tampering with regulatory and "environmental impact" obstacles is supplemented by some very thorough tampering with the "independence" of Mr. Paul Volcker's Federal Reserve. Otherwise, the "independent" destruction of American nuclear capabilities is certain.

DOE plans pro-nuclear educational campaign

Nearly a full month before President Reagan made his nuclear policy statement on October 9 the Department of Energy was instructed to prepare a public educational campaign which would build support for the President's program. On September 10 the DOE Assistant Secretary for Nuclear Energy, Dr. Shelby Brewer, established a Task Force on Light Water Reactor Institutional Problems.

The Task Force was directed to study the need for better public information about nuclear power, and on Sept. 24 submitted a plan to the Assistant Secretary. The plan, covering fiscal 1982, is projected to cost between 1 and 2 million dollars. It is designed to engage representatives of the nuclear industry, scientific community and civic groups in the effort, as well as the public affairs offices of the DOE itself.

The authors of the plan note the misinformation about nuclear energy and radiation which was a hallmark of the Carter administration. They also observe that even though the nuclear industry has an extensive public education program, "all agree that the public is misinformed about nuclear energy." The plan suggests that government officials use the media attention they command to play a very visible role in remedying the situation.

Anti-nuclear Congressional reaction to the proposed plan was immediate. Rep. Richard Ottinger (D-NY) issued a press release on Oct. 12 denouncing the DOE "propaganda" campaign. Ottinger is one of the main promoters of the Global 2000 population reduction program in the Congress and is also the chairman of the Subcommittee on Energy Conservation and Power of the House Committee on Energy and Commerce. He is threatening to bring DOE representatives before his subcommittee to "justify" this "subsidy" to the nuclear industry.

If the proposed DOE program is to be carried out, the administration will have to be willing to wage a battle against top level insiders, such as Office of Management and Budget Director David Stockman, who not only will want to hold back the necessary funding, but who are statedly anti-nuclear themselves.

If the program goes through, the kind of information pollution coming from the likes of Ottinger should be substantially contained, minimizing the fallout of the Carter policy.