

NRC Central

February 26, 1979

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In the Matter of
Arizona Public Service Company, et al.
(Palo Verde Nuclear Generating Station, Units 4 and 5)
Docket Nos. STN 50-592, STN 50-593

Gentlemen:

Enclosed are copies of several written statements by Mark Reader which Mr. Reader transmitted to the Staff at the prehearing conference held in this matter on February 21, 1979. Mr. Reader has expressed the desire that these documents should collectively be regarded as his limited appearance statement in this proceeding.

Sincerely,

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42. See the description of DOE personnel in Science, Vol. 197, No. 4309 (September 16, 1977), p. 1166.
43. A preliminary report on the Mobilization was carried in Science, Vol. 198, No. 4315 (October 20, 1977), p. 384.
44. The story of alleged police spying appeared on the same day (February 24, 1976) that NRC licensing hearings on the Palo Verde reactors opened in Phoenix.
45. Despite promptings from many on its staff, ACLU has chosen not to get involved in the nuclear industry's impact on the political culture in general.
46. Nuclear Power and Its Alternatives, a newsletter published by the Syracuse Peace Council, April, 1977.
47. A story on the Texas incident was reported, in part, in the Week In Review section of the New York Times on August 9, 1974, as follows: "The Texas state police have been keeping a kind of 'enemies list' of their own, aimed at citizens opposed to building a nuclear power plant."
48. In a personal communication, dated November 7, 1977, Donna Warrnock of the Washington-based Center for Science in the Public Interest, writes that she is preparing a soon-to-be-released monograph of nuclear related civil liberties violations in the U.S.

33. Mason Willrich, "Terrorists Keep Out!" Bulletin of the Atomic Scientists, Vol. XXXI, No. 5, (May, 1975), pp. 12-16.
34. The connection between a free people and a free culture was established years ago by John Dewey in Freedom and Culture (1939).
35. Nonnuclear Futures, op. cit.
36. As early as 1958, my mentor at the University of Michigan, James H. Heisel, was suggesting that if America ever "went Fascist" it would happen because people had learned how to think like generals and forgotten how to think like non-combatants.
37. Garrett Hardin, "Living with the Faustian Bargain," Bulletin of the Atomic Scientists, Vol. XXXII, No. 2, p. 25.

In a June 28, 1976, letter to The New York Times, Richard A. Falk of Princeton notes: "Even if we could contemplate a nearly flawless technology, we could not possibly envisage either a flawless cadre of human overseers of this technology or social arrangements of such durability as to provide protection for tens of centuries. Merely stating the issue exposes the folly."

38. Another colleague, Roger A. Coate, has recently suggested that the placement of nuclear reactors in many third world countries may condemn people living in them to semi-permanent, totalitarian rule. News-Sun, Sun City, Arizona (Monday, October 17, 1977) under the headline: "Professor Sees Nuclear Threat to Future of Democratic System."
39. Mark Reader, "Can We Live with Nuclear Power?" WILL, Vol. XIII, No. 6, (February 17, 1977), pp. 16-17.
40. The student newspaper at Arizona State University quotes John Rountree, a public affairs manager for Standard Oil as admitting: "The greater our technology, the greater the surveillance. . . Money isn't available for excessive surveillance. We won't allow it." "Atomic Power Fosters Spying, Experts Say," State Press, November 2, 1976.
41. "TV Station Cancels Show on Nuclear Theft," Arizona Republic, October 31, 1976. The story reads in part, "A network adventure program about the theft of a radioactive element was dropped by a local television station Saturday night. Station officials said they feared it might inspire similar action involving a nuclear plant being built west of Phoenix."

25. J. Burnham (ed.), "The Threat to Licensed Nuclear Facilities," The Nitre Corporation, NTR-7022, McLean, Virginia, (September, 1975). This report has been discussed in greater detail by David Dinsmore Comey, "The Perfect Trojan Horse," Bulletin of the Atomic Scientists (June, 1976), pp. 33-34.

Harvey Wasserman in "The Valley Advocate" alludes to an Oct. 31, 1975, report authored by Stanford University law professor, John Barton, entitled "Intensified Nuclear Safeguards and Civil Liberties," which "links dangers from nuclear terrorism to a potential need for 'a nation-wide guard force, greater surveillance of dissenting political groups, area searches in the event of a loss of materials, and creation of new barriers of secrecy around parts of the nuclear program.'" As reprinted in the New Times (Tempe, Arizona), December 8, 1976, p. 5.
26. The Silkwood case is discussed at some length by Howard Kohn, "The Nuclear Industry's Terrible Power and How It Silenced Karen Silkwood," Rolling Stone, Issue No. 183 (March 27, 1975), pp. 43-46 and 58-62.

A British Royal Commission, headed by Sir Brian Flowers, concluded: "The construction of a crude nuclear weapon by an illicit group is credible. We are not convinced the Government has fully appreciated the implications of this possibility." The Times (of London) September 23, 1976, p. 4.
27. See note 11.
28. A more thorough exploration of the relationship between inequality and nuclear proliferation is offered in Mark Reader, "The Social 'Fallout' of Nuclear Proliferation," WIII, Vol. XIV, No. 10 (March 16, 1978), pp. 7-9.
29. Reader, "Social 'Fallout,' " . . ." op. cit. and William Epstein "Why States Go -- and Don't Go -- Nuclear," "Nuclear Proliferation" Prospects, Problems and Proposals issue of The Annals of the American Academy of Political and Social Science (March, 1977), pp. 16-20.
30. Reader, "Social 'Fallout,' " op. cit.
31. Denis Hayes, "Nuclear Power: The Fifth Horseman," The Humanist (September/October, 1976), p. 26. This article is an edited version of one originally published as Worldwatch Paper 6, Worldwatch Institute, Washington, D.C.
32. Should U.S. energy demands continue to increase without interruption until 1985, Lovins estimates the domestic nuclear fuel cycle will require "over 100 new uranium mines, a new enrichment plant, some 40 fuel fabrication plants, three fuel reprocessing plants. . . the year 2000 finds us with 450 to 600 reactors (including perhaps 80 fast breeders, each loaded with 2.5 metric tons of plutonium). . ." Lovins, "Energy Strategy..." op. cit.

10. Russell W. Ayres, "Policing Plutonium: The Civil Liberties Fall-out," Harvard Civil Rights-Civil Liberties Law Review (Spring, 1975), pp. 369-443; J. Gustave Speth, Arthur R. Tamplin and Thomas B. Cochran, "Plutonium Recycle: The Fateful Step," Bulletin of the Atomic Scientists (November, 1974), and National Council of Churches of Christ in the U.S.A., "The Plutonium Economy: A Statement of Concern (September, 1975).
11. National Council of Churches, ibid.
12. See note 8.
13. "The Danger of Nuclear Proliferation," U.S. Arms Control and Disarmament Agency pamphlet (November, 1974), pp. 5-6.
14. Ibid., p. 6.
15. Robert L. Heilbroner, An Inquiry into The Human Prospect, (1974), p. 43.
16. Jonathan Schell, The Time of Illusion (1975).
17. Mumford's work is in two volumes. Volume One, "Technics and Human Development" was published in 1967, and Volume Two, "The Pentagon of Power," made its appearance in book form in 1970.
18. The book was copyrighted by Commoner in 1971 and published by Knopf in 1972.
19. Ibid.
20. Among the most far-reaching pieces of federal domestic legislation was the National Environmental Policy Act (1969). The Stockholm declaration did not go far enough for many because of its acceptance of entrenched economic and national interests.
21. Lovins, Non-Nuclear Futures, op. cit., and Mark Reader, "Some Costs," op. cit.
22. Reader, "Some Costs," op. cit.
23. Sidney Lens, "The Doomsday Strategy," The Progressive, Vol. 40, No. 2 (February, 1976), pp. 12-35.
24. Ibid., p. 34.

NOTES

1. Alvin M. Weinberg made this case in "Social Institutions and Nuclear Energy," Science, Vol. 177 (July 7, 1972).
2. For discussion of this relationship, see Amory B. Lovins and John H. Price, Non-Nuclear Futures (1975), ch. 2; Lovins, "Energy Strategy: The Road Not Taken?" Foreign Affairs (October, 1976); Lovins, Soft Energy Paths (1977), and Mark Reader (ed.) Energy: The Human Dimension (Tempe, Arizona; Arizona State University Center for Environmental Studies, 1977).
3. Neither claim was entirely truthful.
4. The ambiguous wording and intent of these initiatives probably contributed to their defeat. It was never certain whether initiative advocates wanted to "stop" nuclear power, as the industry claimed, or merely wished to ensure that the industry meet basic safety requirements.
5. For a statement of the Ford Administration-Carter positions on the nuclear energy question on the eve of the 1976 elections, see the articles by candidate Jimmy Carter and Ford Administration spokesman, Fred C. Ikle, in the October 1976 issue of Bulletin of the Atomic Scientists.
6. Occupation of the proposed site of the Seabrook, N.H. reactors by some 2,000 protesters began on April 30, 1976, a week after the Mobilization for Survival, an anti-nuclear weapons and anti-nuclear reactor coalition was formed in Philadelphia. Mass demonstrations at nuclear plant sites had been experienced in Wyl, West Germany as early as February 1975 and have continued intermittently in Germany and France ever since.
7. "No Alternative to Nuclear Power," Bulletin of the Atomic Scientists, Vol. XXXI, No. 3 (March, 1975), pp. 4-5.
8. "Nuclear Power. . .Focus of a Burgeoning Controversy" (A Declaration by members of the American technical community), Hot Man Apart, Vol. 15, No. 17 (September, 1975).
9. The phrase "plutonium economy" is assigned to the type of nuclear reactor which extends limited uranium supplies by using plutonium wastes as its fuel and "breeding" more plutonium than it consumes in the process.

states the actual chance of practicing republicanism and of continuing, for very much longer, their lives, their liberties and their ability to pursue happiness?

How will the nuclear alternative affect our lives and liberties? No one seems to know, and what's more, too few seem to care.

* This article originally appeared in Peace & Change, Vol. V, No. 1, (Spring, 1978), pp. 3-11.

** The earliest version of this paper was a statement read at a mass meeting of Arizonans Against Nuclear Energy on the Arizona State University campus November 6, 1975. Subsequent versions appeared under the title "Some Costs of Nuclear Power," ECO, a publication of Friends of the Earth (November, 1975), and in the Bulletin of the Atomic Scientists (April 1976), pp. 3-4. The thesis was also used as the basis for a paper presented at a joint meeting of the Southwestern region of the AAAS and Arizona Academy of Sciences (April 29, 1976) and was reported in the Arizona Daily Star (April 30, 1976). It was later prepared for oral delivery before the subcommittee on Energy and the Environment of the Committee on Interior and Insular Affairs, House of Representatives, prior to the cancellation of these hearings by Rep. Morris Udall. As a result of this cancellation, the statement was not delivered to Congress. The present version is substantially revised.

In this latter connection, it will be important to get answers to questions such as these:

1. To what extent do local social indicators -- like a high crime rate, unemployment, rapid population growth, large-scale illegal immigration, heavy traffic in drugs, a clash of cultures, and a weak tradition of civil liberties -- suggest social instability and increase beyond current expectations the need for security precautions at the site of each actual and proposed nuclear reactor, and within the communities in which they operate?

2. To what extent does the safe operation of the nuclear fuel cycle depend upon high levels of information, the quality of education, the availability of widely-shared skills and an enriched and open cultural milieu? Or is a more limited and less open culture more compatible with the nuclear alternative?

3. To what extent is the nuclear alternative changing the social, economic and political character of the nation by creating new, and potentially anti-democratic industries and habits of thought and action? What are the economic as well as the political costs of these changes?

4. To what extent will it be possible to teach coming generations democratic and non-violent values, to live happy and open lives, and to avoid anxiety in a society geared to the protection of nuclear energy plants whose physical, ethical and human implications have never been fully or publicly explored?

5. To what extent, if any, did Congress -- in authorizing the nuclear alternative -- inadvertently deny to the states and to the citizens within the

opposition to the siting of a nuclear power plant near Dallas and alluded to the still-controversial death of plutonium worker Karen Silkwood who was involved in a nuclear safety dispute at the Kerr-McGee nuclear plant in Oklahoma at the time of her fatal auto accident.⁴⁷

5.

Two things are clear about these and related reports. They are not likely to be exhaustive of actual or potential civil liberties violations in connection with the spread of nuclear reactors around the country,⁴⁸ and they need not add up to a deliberate and planned pattern in order to pose a threat to civil liberties by the government and the nuclear industry. Indeed, as the reports themselves suggest, it is the nuclear paradox, more than any single person or groups' ill will, which is endangering individual civil liberties and the nation's political culture.

6.

If, and when, a congressional investigation into the nuclear reactor impact on civil liberties begins, as is presently being rumoured in the press, questions of two sorts must be asked: (1) how many de facto violations of civil liberties have actually taken place in connection with nuclear reactor operation? And as importantly, (2) to what extent has the fission commitment contributed to the erosion of democratic political culture?

The ACLU opposes the licensing and operation of any facility designed to convert and deliver energy to consumers where governmental suppression of information or the infringement of any constitutional guarantee accompanies the licensing and/or operation of the facility or associated facilities. Before a license is granted for operation of any energy facility a comprehensive statement should be presented showing that protection of civil liberties has been considered and implemented.⁴⁵

(4) In a more general article entitled, "Nuclear Power: Dictator of Our Political Future," Lorna Salzman, New York Representative for Friends of the Earth, states that groups being spied upon in connection with their anti-nuclear activities include Friends of the Earth, the Sierra Club, Ralph Nader's public interest groups, Environmental Action, Environmental Policy Center, Another Mother for Peace, and the Union of Concerned Scientists. Salzman goes on to claim that some utilities, such as Potomac Electric Power Co. have files on environmental letter writers in general; that "Jacqueline Srouji, an FBI informant, had infiltrated the reporting staff of the Nashville Tennessean in order to keep tabs on an editor and a reporter who had written articles critical of nuclear power:" and that the State of Virginia "considered a bill in 1975 (proposed by the Virginia Electric Power Co.) to permit VEPCO to set up its own police force with the power to arrest anyone anywhere in the state and obtain confidential records on citizens."⁴⁶

Salzman also repeated widely reported charges that in 1975 the Texas State Police had assembled a dossier on a Continental Airlines pilot because of his

(3) In a little noticed story of February 24, 1976, appearing on the eve of licensing hearings for one of the nation's largest commercial reactor complexes being built 45 miles west of Phoenix, Steve Tragash of The Arizona Republic reported:

Police gathered intelligence on some equal rights amendment backers during a Jan. 30 protest at the State Capitol, a legislator charged Monday.

Representative Art Hamilton, D-Phoenix, said at least four plainclothes police officers admitted to him that they had taken notes on and pictures of some citizens passing out 'left-wing, radical literature.'

The demonstrators were distributing literature protesting American involvement in Angola and nuclear power plant construction in Arizona, Hamilton said.

A second report of the event, complete with denials and countercharges, was published some weeks later, on March 10, 1976, in The New Times (Tempe, Arizona) under the title, "Lawmaker Charges State, City Police Spied on ERA Rally, Calls for Watchdog."

At issue in both accounts of the event was whether police were engaged in a legitimate act of "monitoring" a public demonstration or an illegitimate act of crowd surveillance. Whatever the answer to this question, given its time-proximity to local NRC hearings which led to the licensing of the Palo Verde Nuclear Generating Station (PVNGS),⁴⁴ one can only wonder whether the event created a "chilling effect" of the kind alluded to in a resolution adopted by the American Civil Liberties Union board in April, 1976:

(2) The links between utility surveillance of potential and actual nuclear opponents, on the one hand, and governmental intelligence units, on the other, was alluded to a month later, on November 21, 1977, in The Washington Post.

Under the headline, "Nuclear Plant Security Poses Civil Liberties Dilemma," Post staff writer Bill Richards wrote:

In July. . . security experts from utilities across the country gathered in Boston for a day-long seminar on an unorthodox sit-in held last May in Seabrook, N.H., by a groups called the Clamshell Alliance. . . .

Organizers of the Boston conference said it was held to discuss tactics, not exchange names or security intelligence on members of the Clamshell group, which has formed chapters around the country.

Still, at least one out-of-state security official who took part said he came away with new intelligence information on the group for his files.

And the New Hampshire state police, who ran the seminar, list in their files inaccurate information on the Clamshell organization, including one note that informants said the sit-in was only a cover for 'terrorist activity' and that the group might include bombers.

A source for the New Hampshire police files on the Clamshell Alliance was John H. Rees, a publisher of a small Washington-based newsletter that provides information on dissident groups -- including nuclear opponents-- to police departments and at least one utility -- the Georgia Power Company.

Since its April-May occupation of the Seabrook site, the Clamshell Alliance has tied itself loosely to what is likely to be a more national and broadly based anti-nuclear, peace and environmental movement, the Mobilization for Survival.⁴³ Whether surveillance has been extended to this latter group is not known.

As for the political culture and infrastructure, there is every reason to be concerned about daily accounts of the development of new and more exotic surveillance devices to monitor nuclear reactors; security checks for more and more people who are entering and being asked to leave the nuclear industry; decisions to "beef up" military and para-military security at the site of an increasing number of nuclear plants; the Carter Administration's decision to make the licensing of nuclear facilities easier but not more democratic; the acceptance by some industry representatives of some decline in civil liberties as the price to be paid for high energy technologies;⁴⁰ local censorship of network television programs portraying fictionalized accounts of nuclear materials theft;⁴¹ intensification of an oil company - utility media blitz designed to sell nuclear power as necessary for a "strong" America; and the creation of a federal Department of Energy presided over by non-elected nuclear advocates.⁴²

Direct assaults on civil liberties as a result of supplying energy through the nuclear reactor program are visible in growing number, too.

(1) On September 9 and October 5, 1977, under the headlines "Ga. Power Has Files on Nuclear Foes," and "Utility: Deposition Led to Firing," respectively, The Atlanta Journal reported that out of concern about widespread thefts and new federal rules on nuclear power plant safeguards, the Georgia Power Co. created a security department in 1973 that presently has a plain-clothes section of "nine investigators, a budget surpassing \$750,000 and equipment described by some as equal to or better than that used by any police detective unit in the state." The Atlanta Journal also reported that the "utility's files on individuals and groups considered 'subversive' to the publicly regulated utility's interests reportedly contain information gathered through private and questionable national intelligence sources."

elbowed aside to make room for all of the surveillance and supporting infrastructure which the atom requires.³⁴

As Lovins argues, the nuclear alternative will culminate in permanent systems of dominance and submission.³⁵ As significantly, however, it will also require citizens to think like soldiers rather than as free and open people.³⁶

The second totalitarian feature present in fission power has been identified more recently by Garrett Hardin, among others.³⁷ Given a nuclear technology which must be operated without major error for generations, given an exponentially growing number of nuclear transactions and control points, and given the fact that imperfect and free human beings are to be found at more and more interstices of a nuclear fuel cycle becoming universalized -- how in the real world can the impetus toward police state controls and nuclear catastrophe be avoided?

For the most part, these questions remain unresolved.

What is certain, however, is that as nuclear reactors proliferate around the globe, people in both the industrialized and non-industrialized parts of the world will have to find ways of avoiding police states run, directly or indirectly, by nuclear elites on behalf of nuclear interests.³⁸ If this is not done, then one can expect both the level of anti-nuclear violence and repression to rise and the chances of a nuclear catastrophe to increase.³⁹

4.

The evidence of civil liberties violations in America in relation to nuclear power development is both direct and indirect, operating at the most visible level of First Amendment freedoms as well as the less tangible, but no less critical, level of the supporting political culture.

a simple paradox. Commercial nuclear power is viable under social conditions of absolute stability and predictability. Yet the mere existence of fissile materials undermines the security that nuclear technology requires."³¹

And this is precisely what is happening in the real world today. The need for greater and more sophisticated social controls is increasing directly as are the number of sites at which uranium is being mined, the number of radioactive transportation transactions, the number of enrichment facilities, the number of fabrication plants, the number of reactors, the number of radioactive burial grounds, the number of nuclear technicians, the number of supporting industries and the number of nuclear decisions and concerns. If Amory Lovins' estimate of the hardware needed to run the nuclear industry over the next generation is even partially correct, one can expect the de facto destruction of democratic culture before the year 2000.³²

Mason Willrich seems to have anticipated some of the major social costs of nuclear reactor proliferation in an article of May 1975. There he pointed out that an expanded reactor program would require protection against theft and acts of terror; public and/or private para-military units to safeguard nuclear power plants and the processes they set in motion; security consciousness in government and in industry which, in turn, would necessitate a security establishment; development of appropriate surveillance technologies to guard against theft and sabotage of nuclear materials; and the need to control "malfunctioning humans" and, by implication, the environments in which they operate.³³ What Willrich seems to have missed, however, is that as these requirements became more comprehensive and more permanent, democratic political culture, upon which the actual health of all civil liberties ultimately depends, would itself be

enormous amounts of social control over the whole of an ever-expanding nuclear fuel cycle for extended periods of time and even then be prepared to experience nuclear breakdowns.

According to this view, what the National Council of Churches said about the potential totalitarian characteristics of the plutonium economy of tomorrow may be applied with equal truth to the actual workings of the fission economy of today: "The drastic nature of the nuclear threat is apt to elicit a drastic police response. Even these measures, however repressive, might in the end prove ineffective."²⁷

First, it is noted, the nuclear option intensifies the very conflicts it must avoid if the nuclear fuel cycle is to be secured. It does so by aggravating political, economic and ego inequalities -- either by dividing the human community into nuclear "have" and nuclear "have-not" nations and persons, as has happened in world politics from 1945 onward; or by making some nuclear "haves" more equal than others by denying the least-favored equal access to nuclear information and technologies.²⁸ (It is this latter circumstance which sets up the need for a permanent political intelligence network and information-control.)

The result is familiar enough. As the least-favored struggle to free themselves from superpower dominance and secure the equivalent of nuclear parity through military, technological and economic assistance from the superpowers, the number and location of human transactions that must be controlled increases exponentially. . . even as the atom begins to proliferate globally.²⁹

The nuclear paradox is thus set in motion. The more the atom proliferates the greater the need, and the less the ability, to control it.³⁰ Denis Hayes describes the dilemma this way: "Arguments against nuclear power are rooted in

Shortly before Lens' article appeared, in a report prepared for the Nuclear Regulatory Agency (NRC), the Mitre Corporation had recommended that in-depth information about terrorist and "other threatening groups" should be obtained by NRC from government intelligence agencies "including any information indicating a potential threat to the industry generally, or to a specific company."²⁵ Thus, by the close of 1976, recommendations had been made to government to have the surveillance network follow the nuclear industry wherever, and perhaps however, it might decide to operate. The nuclear fuel cycle, along with its security needs, was expanding exponentially.

But the most convincing evidence establishing the actual negative connections between nuclear energy and human rights was, as it continues to be, provided by events themselves.

Since 1975, the nuclear question has been kept alive by the Karen Silkwood case, reports of radioactive leaks at storage facilities on land and at the bottom of the seas, disintegrating space capsules, findings of special commissions in Britain, electoral outcomes in Sweden, the loss and hijacking of large quantities of fissionable bomb-grade materials, the sale of atomic reactors to unstable or dictatorial regimes, and mounting clashes between nuclear protestors and security forces at the scene of atomic reactors in one community after another.²⁶

3.

As presently conceived, the theory of the basic incompatibility between atomic power and civil liberties runs something like this:

In order to avoid nuclear contingency - accident, theft of fissionable materials, sabotage of facilities, war, blackmail, uncontrolled protests or clandestine atomic bomb-making - people who are enthralled to the atom must exert

simultaneously, prevent the lives of anyone's children from unfolding in ways other than those now narrowly being prescribed by this . . . year's crop of nuclear specialists.

Now where have we come across this incessant need for security before, and what did it lead to then? . . .

It was just this sort of argument, because it was out of precisely the same sort of ungovernable circumstance, that helped generate the cold war; containment strategies. . . and an unwillingness and/or inability on the part of democratic governments. . . to protect even their own people and their own democratic institutions from being subverted by "security needs."²²

At about the same time, peace activist Sidney Lens put the case against the "peaceful" atom in an influential article entitled "The Doomsday Strategy":

Who will guard against theft of plutonium by terrorist gangs or guerillas? The AEC itself, in the Rosenbaum Report of 1974 hinted that nothing less than a police state will suffice. A million people have already been trained in the handling, moving, and operation of nuclear weapons - each one of whom must be checked for security. Millions more will have to be similarly checked as the reprocessing industry expands.²³

And Lens added:

'The first and one of the most important lines of defense against groups which might attempt to illegally acquire special nuclear materials to make a weapon is timely and in-depth intelligence,' says the Rosenbaum Report. 'Such intelligence may involve electronic and other means of surveillance, but its most important aspect is infiltration of groups themselves.' (Emphasis added.) This task, says the report, must be undertaken not by the AEC but by the U.S. Government, including the FBI, CIA and NSA.²⁴

culmination of an anti-human technological dynamic and a civilization which had foregone all restraints on power - constitutional and otherwise - long ago. Environmental works like Barry Commoner's The Closing Circle, published originally in The New Yorker magazine, completed the picture.¹⁸ Commoner reminded those who had forgotten, and taught many who had never learned, that every human decision, including the nuclear one, carries with it social as well as ecological costs, that radiation is a continuing problem, and that humanity had best get clear about the social costs of doing business if it wished to survive.¹⁹ These and similar lessons led to belated and much-receded environmental legislation at the national level and to a not-altogether-satisfactory international declaration of environmental rights at Stockholm in 1972.²⁰

It was not until 1975, however, that a handful of environmentalists began to talk and write about the negative political costs of atomic power and the inverse relationship between it and democracy. By the end of that year they were beginning to forge intellectual links with peace activists in the common understanding that there never had been - and there never could be - any fundamental difference between the anti-democratic fall-out from atomic reactors or from atomic bombs. Both, they were beginning to realize, would lead, as they had already led, to the trammeling of fundamental liberties and to rule by narrow-gauged military-technological elites.²¹ The civil liberties case against nuclear reactors was being developed in this way:

. . . if one faces the issue squarely, one quickly comes to understand that the social costs involved in running (nuclear reactors). . . will require us, minimally, to continue to exert enormous amounts of control over the everyday lives of people in this and the next generation in order to safeguard these plants against contingencies (read: people) and,

The terrorist worry was popularized by economist Robert L. Heilbroner in his widely-read An Inquiry into The Human Prospect:

I do not raise the specter of international blackmail merely to indulge in the dubious sport of shocking the reader. . . . Yet two considerations give a new credibility to nuclear terrorism: nuclear weaponry for the first time makes such action possible; and 'wars of redistribution' may be the only way by which the poor nations can hope to remedy their condition.¹⁵

Confidence in the non-violence of the atom was further shaken in a more subtle way as well, as some people began to digest the lessons of the Vietnam War and the meaning of the Watergate break-in in what supposedly had been the bastion of human freedom. With commentators such as Jonathan Schell and Hannah Arendt, they were beginning to conclude that the decline of democracy in America—expressed in the rise of a surveillance society at home and in a brutal and unjust war in Indochina—was tied directly to that country's role as a superpower in the Nuclear Age.¹⁶ As Schell aptly put it, America's nuclear weapons credibility was at stake in Vietnam and the sacrifice of traditional political liberties to the "Imperial Presidency" and to Richard Nixon was the price Americans had paid to maintain it.

Less definite, but in the long-run as consequential in destroying the image of the peaceful atom, was a change in perception ushered in by the convergence of the humanistic and environmental movements sometime in the early 70's. With the appearance of portions of Lewis Mumford's two-volume The Myth of the Machine¹⁷ during the decade of the sixties, it had become clear to literate audiences that nuclear reactors were much more than accidental sources of energy developed as a twentieth century after-thought. Rather they could be seen as the necessary

nuclear explosive from fissionable materials produced under its atoms-for-peace program but, in so doing, had shattered the myth of the peaceful atom for all times. In an atmosphere that was then charged with concern over domestic and international acts of terrorism, many became persuaded that the nuclear-bomb genie was about to get out of the bottle by virtue of atomic reactor sales abroad. It would only be matter of time, they concluded, before "the Bomb" proliferated around the world, the nation-state system itself was undermined, and nuclear weapons would fall into the hands of terrorists and, more worrisome, the mentally deranged.

In a carefully worded statement to the Conference of the Committee on Disarmament (CCD), then U.S. Representative, Ambassador Joseph Martin, Jr. asserted: "It is clearly impossible for a nonnuclear-weapon nation to develop a capability to conduct nuclear explosions for peaceful purposes without, in the process, acquiring a device which could be used as a nuclear weapon."¹³ An even more comprehensive version of this view was already contained in the May, 1971, understandings and declarations which accompanied the U.S. Ratification of Protocol II of the Treaty for the Prohibition of Nuclear Weapons in Latin America:

...the United States Government considers that the technology of making nuclear explosive devices for peaceful purposes is indistinguishable from the technology of making nuclear weapons, and that nuclear weapons and nuclear explosive devices for peaceful purposes are both capable of releasing nuclear energy in an uncontrolled manner. . . .¹⁴

Apparently accepting the first position, the governments of Europe, Japan and, to a lesser extent, the United States had begun to seek ways of implementing a plutonium based economy.⁹ This decision, in turn, had created a predictable backlash: protests in Europe and more sober consideration, on both sides of the Atlantic, of the social fall-out which a breeder reactor program might be expected to bring along with it.

Under this mounting pressure for U.S. commitment to the breeder as a way out of energy crisis, Russell W. Ayres, J. Gustave Speth and the National Council of Churches published separate warnings¹⁰ that the plutonium economy would mean an end to civil liberties and the beginning of a police state everywhere. As the National Council of Churches statement put it, in an effort to suppress nuclear violence and coercion, to limit the spread of illicit weapons, and to encourage the needed perpetual social stability, the United States and other countries may have to undertake massive social engineering and to abrogate traditional civil liberties. The drastic nature of the nuclear threat is apt to elicit a drastic police response. Even these measures, however repressive, might in the end prove ineffective.¹¹

And many scientists seem to have agreed: ". . .satisfactory plutonium safeguards procedures appear to require special pervasive security apparatus which could take the United States a long way down the road to a police state."¹²

At the same time, these and other scientists were responding to the second event referred to above. In 1974, India had not only detonated a

The official view of the benevolent atom had begun to crumble somewhat earlier, however. Two events of the years 1973 and 1974, the Arab oil embargo and India's detonation of a nuclear device, had gradually led some voices to raise the question of nuclear power and its relation to civil liberties.

Among its many side-effects, the Arab oil embargo demonstrated the vulnerability of industrial civilization to an oil squeeze and accelerated the drive toward national energy-independence and alternative energy sources, chief among them the nuclear one. The fear of energy blackmail and a general lack of confidence in governments' ability to get through the energy crisis seems to have cemented energy positions almost everywhere. For example, in a widely-circulated statement, 32 scientists expressed skepticism that people presently living within industrial societies would, could and/or should curtail or change their patterns of energy use and consumption during the next generation when severe energy shortages might be experienced. They concluded that, consequently, nations would have to take the nuclear route to avoid catastrophe.⁷ On the other hand, a large and equally imposing group of scientists was finding otherwise.

The problems now besetting nuclear power are grave but not necessarily irremediable. A major program of reactor safety, plutonium safeguards, and waste disposal research, conducted with much enhanced priority and level of competence, might be able to provide the answers to the technical concerns that have accumulated. . . . In the meantime, however, the country must recognize that it now appears imprudent to move forward with a rapidly expanding nuclear power plant construction program. The risks of doing so are altogether too great.⁸

Energy decisions are thought of as primarily economic and technological, with publics expected to play supporting roles to elites who set energy policy. Because energy questions are rarely put to the vote, many people seem more willing than otherwise they might be to accept the claim that all they need do to assure themselves a limitless supply of energy is maintain "eternal vigilance" over the nuclear fuel cycle.¹ That idea seems more readily apparent, at any rate, than one which proposes that there might be some connection between energy choices and personal liberties.²

Indeed, the technological skewing of modern culture is so complete that it affects every side of the nuclear debate. Thus, as recently as 1976, when the nuclear energy question was put to the voters in six western American states, it was conceived of as a problem of "safety", with anti-nuclear forces calling for a nuclear reactor moratorium on safety and financial grounds and nuclear proponents complaining that such a pause would arbitrarily punish an industry whose safety and employment records were second-to-none.³ Those few voices that tried to deal with atomic energy from a political and ethical perspective were drowned out in the acrimonious exchange of statistics and ill will which passed as debate.⁴

In retrospect, however, the safe energy campaign probably marked the last time in America when the nuclear debate would, and could, be cast almost exclusively in economic and technological terms. Even then, a series of seemingly disconnected events were forcing the presidential candidates to consider the political implications of the nuclear alternative⁵ and, within six months of the elections, the Clamshell Alliance had succeeded in dramatizing its view that atomic reactors posed a de facto threat to human life, liberty and happiness.⁶

POLITICAL CULTURE IN THE NUCLEAR AGE:*

Atomic Reactors and the Threat to Civil Liberties**

Mark Reader

"We are committing a folly of thoughtlessness. It must not happen that we do not pull ourselves together before it is too late. We must muster the insight, the seriousness, and the courage to leave folly and face reality."

--Albert Schweitzer

A Declaration of Conscience, 1957

1.

As with any unsettling problem, the civil liberties challenge posed by nuclear reactors remains obscured. When referred to at all, it is spoken of in guarded terms, either as an insignificant contributor to events-past or, more commonly, as something to be concerned about in the not-too-distant future but not just today. Until recently, the everyday conflict between atomic energy and human freedom was scarcely noticed and routinely denied.

But events over the past several years have changed that. As both commitment and resistance to atomic power as a way of solving the world's energy crisis grows, it is becoming increasingly evident that fission power--in both its military and energy applications--now constitutes a clear, present and continuing assault on human freedom.

2.

This idea of the fundamental incompatibility between nuclear energy and democracy is relatively new and, consequently, not very well understood. Indeed, the idea is so at odds with conventional wisdom that most official and popular discussions of the energy crisis, and the atom's place in it, go on without it.

stability, indeed, this was one of the major concerns voiced at a two-day energy conference that brought Barry Commoner and 6,000 Arizonans to Scottsdale in September of 1976 to consider the implications of energy choices on their lives, and was repeated in several energy town meetings held in six communities around the state in 1977.

Nevertheless, without additional outside assistance in the form of legal aid and media coverage, Arizona's indigenous non-nuclear forces may not be able to make the state a nuclear-free zone and to re-direct Arizona's energy future along a more environmentally appropriate and supportable solar path.

But if local critics of nuclear power are correct in their prognosis, more is at stake in Arizona's nuclear controversy than the fate of the PVNGS as economically and environmentally important as that might be.

Arizona's non-nuclear forces seem to be asking the rest of the nation to decide whether nuclear reactors located in culturally immature parts of the world committed to a high-technology version of economic development can be run safely and without the permanent loss of liberty for nuclear colonies and colonizers alike.

What these desert grandchildren of Joseph Wood Krutch may be telling us is that the time has come to choose between our money and our lives. Hopefully, we will not think the two equal nor hesitate as long in reaching a decision as did the comic character created by the late Jack Benny.

Until recently Arizona's nuclear opponents--burdened by strained communications and political intimidation and virtually without funds--have blamed themselves for their lack of progress in stopping the PVHGS. Arizonans for Safe Energy have had to live down the ambivalent nuclear "safety" position it adopted during the safe energy initiative of 1976. Citizens for Environmental Responsibility has added a technical hydrogen "fix" to its early and continuing anti-nuclear stance, and members of Arizona branches of nationally based environmental groups, like the Sierra Club, have been more interested in day-hikes than in environmental protection and, as a rule, have remained silent on the nuclear issue even when their nationals have not.

This process of self-recrimination and self-hatred, a common affliction among the powerless, has begun to reverse itself during the past several months however.

The newly formed Arizona Mobilization for Survival has interested peace activists and some influential members of the Phoenix religious and professional community in the anti-nuclear cause and has linked up with anti-nuclear coalitions, like the Cactus Alliance, across the state and around the country.

As promising, the argument first heard here about the inverse relationship between nuclear power and democracy has begun to take hold in the public consciousness.

Everyday there seem to be more Arizonans who are beginning to wonder whether a culture which prides itself on its violence--its ethic of unbridled competition and the frontier love of guns--is a fit place to locate a technology which requires the highest measure of social control and political

For a combination of environmental and cultural reasons, then, Arizona's anti-nuclear forces are now asking for a permanent moratorium to all nuclear construction in, and planning for, the state. Arizona's highly-charged ideological atmosphere, they fear, will continue to cloud prudent scientific and social judgments and turn this solar state into a permanent battleground between pro-solar and pro-nuclear forces.

Given Arizona's present political climate, however, it does not appear that the powers-that-be will heed this warning, and without political allies there are limits to what anti-nuclear forces can do to stop Palo Verde.

The most visible self-proclaimed environmental politician in Arizona is U.S. Representative Morris Udall (Tucson). While Udall's House subcommittee on environment and energy has held a series of admirable hearings on nuclear power in recent years, Udall himself has sidestepped the nuclear issue in his home state. When given the opportunity to move against licensing of the PVINGS in the spring of 1976, he chose not to get involved; and he has said publicly that radioactive wastes produced in Arizona will stay there.

The other possible progressive politician with state-wide visibility is Governor Bruce Babbitt who has indicated his willingness to accept units 1-3 of the Palo Verde complex as a fact of life, and whose solution to the nuclear question is permit pro-nuclear, pro-industry forces to dominate specially-arranged energy conferences and appointments.

With Arizona's political structure immobilized or actively supportive of a nuclear presence in Arizona, in-state nuclear opposition is coming from several non-elected sources: Arizonans for Safe Energy (ASE); Citizens for Environmental Responsibility (CER); Arizona Mobilization for Survival; and a handful of environmentalists, solar enthusiasts, professional people and academicians.

Consequently, "the Phoenix metro leadership community" must be "organized and galvanized, and motivated and equipped for the fray. . . otherwise the opposition, which will be all of those things, is almost certain to carry the day."

As serious and sometimes comical as is the problem of cultural imperialism in Arizona, indigenous nuclear critics are even more worried that image distortions may adversely affect the quality of work at PVNGS and may have coloured the way in which nuclear enthusiasts have read the environmental map of the state.

While the utilities and IIRC scientists tend to see patterns of stability and continuity in the desert, Arizona's nuclear critics wonder about the effects on the safety and operation of the Palo Verde facility of periodic droughts, torrential rains, flash flood, shifting water tables, high winds, sand storms, earthquake after-shocks, and the cumulative destructive force of the ever-present sun.

More worrisome are wildcat strikes at the construction site and reportedly low worker morale, a high accident rate on the state's railroads, reports of shoddy workmanship and cornercutting in many industries, continuing problems with organized crime and illegal immigration, and the ability of Arizonans to generate a continuing nuclear leadership. These are taken as sure signs that the state does not really possess the skills nor social climate necessary to run the atomic industry's demanding high-technology for long periods of time without incident.

In their eagerness to declare Arizona an ecologically and culturally stable zone, critics fear nuclear advocates may have ignored or underestimated the sudden discontinuities that are as much a part of desert life as are the cactus wren and cholla plant.

at the scene of a non-violent, non-nuclear protest at the Palo Verde site has reported that ~~state~~^{County} police photographed the license plates, including her own, of all who attended.

Among local nuclear opponents, then, there is general agreement that in order to hold onto its nuclear investment, APS intends to force its version of reality upon Arizonans no matter what the human and political cost.

This view was reinforced recently when a group of self-appointed civic leaders and developers, including APS president Turley, hired high-technology advocate Herman Kahn to advise it on Arizona's future. As could be expected, Kahn's preliminary report suggests that Arizona will continue its present energy consumption patterns and lifestyle into the indefinite future without change or interruption. As much was admitted by APS president Turley late in July 1978 in a well-publicized speech delivered to a Phoenix Rotary Club luncheon audience of more than 200 bankers, doctors, lawyers, judges, merchants, legislators, and other civic leaders. As reported by the Arizona Republic in its lead story of July 22, Turley told his audience that :

Phoenix has a leadership vacuum into which environmentalists, no-growth advocates and "social disruptives" will step if responsible business leaders don't. . .

"I do not come here to suggest resurrecting the Establishment. . .," he continued, but "I fear that the 'someone elses' will come from the point of view diametrically opposite yours and mine as believers in the American economic and government system," The Republic reported him as saying.

Where information about the world is regularly distorted, where honesty is absent from everyday dealings and where the environmental and human costs of decisions are regularly ignored, these critics argue the chances for a nuclear mishap in Arizona--and in all similar localities--move from the "probable" to the "likely" column. In such cultures, they say, people will either misinterpret each other's motives escalating the social conflict quotient beyond endurance, and/or they will misread both the lessons of their physical environment and their more technical instructions with tragic consequences to all.

By way of illustration, Arizona's nuclear spokesmen have already introduced the paranoid style of Arizona politics into the local nuclear dispute thereby guaranteeing an endless succession of nuclear victims and executioners.

In 1978, for example, a Japanese "no-nukes" peace delegation from Hiroshima was denied a walking tour of the Palo Verde Nuclear Generating Station and was photographed by an APS employee as it was driven in a bus to the construction site; an APS public information officer for the PVNGS told her audience, at a nuclear waste disposal symposium in Tucson sponsored by the Arizona Atomic Energy Commission, that those opposed to nuclear power were doing so because of hidden motives; cameras have allegedly been confiscated from students who were touring the APS-run facility because some were identified as taking a course from a non-nuclear professor; at a State Board of Education energy education task force meeting utility representatives opposed inclusion of the words "conservation" and "renewable energy sources" in the group's final report because of what they regarded as the "political" connotations of these terms, and an official Arizona Civil Liberties Union observer

For example, Senator Barry Goldwater has tried to endow a chair at Arizona State University to keep alive his ideals of laissez-fairism, individualism, and Americanism; and the state's high schools continue to require graduating seniors to take a course in the free enterprise system.

When coupled with frontier ethics and frontier justice--which is neither ethics nor justice--the official ideology of Arizona's political and economic establishment can easily be used to mask white collar and organized crime--both of which are rampant in the state as a nationally-organized team of reporters investigating the murder of Arizona Republic reporter Don Bolles made clear in 1977--and/or to support religious and political fundamentalism which, when converted into votes, usually turns up as an ingredient in Arizona's congressional delegation.

Taken together, the business civilization and its less respectable caricatures define the contours of Arizona's political and economic landscape and give the state what is said to be its "conservative" cast.

It is this cultural configuration of economic greed and resulting political repression that has given local opposition to nuclear power in Arizona its unique thrust.

In addition to opposing the Palo Verde reactors on economic grounds and questioning the need of Arizonans to follow a high-energy consumption path, Phoenix-based nuclear critics claim that Arizona's lifestyle--its culture--make the state one of the least reliable places in the country in which to locate any part of the nuclear fuel cycle.

APS and Salt River Project provided water and power to early farmers and settlers; they now provide water and electrical energy to agribusiness, modern industry, and homeowners. Fortunes have been made and lost in land deals, honest and otherwise. The legitimate real estate lobby is a significant force in local Arizona politics today, but so too have been those recently convicted of land fraud. And Arizona's mining industry continued to wield a disproportionate amount of political clout for its size and payroll. By way of example, it is now clear that industry lawyers drafted recent legislation which will permit uranium mining-milling interests to deed low-level radioactive wastes to the state at a fraction of the cost of clean-up.

On the communication's side, Arizona newspapers--especially the Arizona Republic/Phoenix Gazette (which control the information flow to most central Arizona residents)--are notorious for their political dogmatism and ability to make or break political candidates, and the state's two largest universities, Arizona State University (Tempe) and the University of Arizona (Tucson), are geared toward technological excellence and corporate interests. Indeed, a recently retired dean of Arizona State University's College of Engineering led a successful, state-wide, pro-nuclear media campaign to defeat a safe energy initiative in the state in 1976.

Arizona's pattern of wealth and power has given the nation a distinctive group of political leaders and value-makers who share in common a commitment to social Darwinism--the official ideology of America's business civilization at the turn of the last century--along with an advanced case of 20th Century nationalism and aggressive anti-communism.

In briefest terms, what makes Arizona an attractive place for nuclear and other high-technology and high-energy planners is the seeming infinite malleability of both its land and its people.

Anglo settlers in Arizona--from nineteenth century miners and Mormon farmers to present-day suburbanites in Phoenix and Tucson--have traditionally sought wealth by exploiting the state's mineral (copper) rich rocks and mountains and by turning the Sonoran Desert into, first, an agricultural oasis and, more recently, a realtor's dream of massified communities and playgrounds.

To do this, they have expended an enormous amount of energy levelling mountains, lowering the desert's water table, changing the flow of the state's natural rivers and privatizing everyone's experience. In the process they have altered much of the living desert--destroying sizeable portions of its natural vegetation and wildlife--and virtually obliterating indigenous Indian and Mexican cultures in favor of an all-pervasive, energy-intensive, consumption-oriented civilization of their own.

To live in today's Arizona one must be able to rely on one's automobile, shopping center, air conditioner, and mass media to get to work, buy food, cool one's home and keep in touch with the affairs of the state and of the world. . . or so a largely migrant population without desert living experience is taught.

Modern sources of political power and values in central Arizona, where the PVNGS is being located, are built around traditional sources of wealth (water, land, minerals, and energy) and the special commercial, transportation and communication needs of low-density, high-mobility populations living in a desert region.

Add to this the lack of effective state laws governing the nuclear industry in Arizona, the availability of relatively inexpensive land on which to build gigantic nuclear parks, and generally favorable weather conditions which lengthen the building season; and one may confidently expect lower-than-usual nuclear construction costs at PVNGS and elsewhere.

The point has not been lost on utilities' spokesmen. Thus, APS president Keith Turley estimates that industry savings in building PVNGS units Nos. 4 and 5 at Wintersburg might run as high as \$300 million by taking advantage of work already in progress.

But the absence of state-initiated nuclear regulatory legislation in Arizona, coupled with no requirements to show "need" for atomic produced electricity, as in California, may be an even greater incentive to investors.

In its home state, California Edison, for example, faces tough laws that have brought development of new plants to a standstill pending solution of the problem of permanent disposal of radioactive wastes from reactors.

"Even without those laws," the Arizona Daily Star reports, "the utility would face a three-year process of scrutiny and studies before approval of the plant site."

But with the acquiescence of the Arizona legislature, both major political parties, state boards and agencies, and a public opinion shaped by the pro-nuclear news media, lag-time in Arizona may be reduced to a matter of months.

And this suggests the final, and perhaps the decisive, reasons for locating atomic reactors in this sun country: Arizona's much-touted lifestyle which seeks to put a boat in every carport, a swimming pool in every backyard, and a putting green around every cactus.

If one looks at geological survey maps and statistical references alone--and conveniently forgets the lives that growing numbers of people who inhabit the desert might reasonably be expected to live under a nuclear umbrella--Arizona seems ideally suited to an industry plagued by fears about its expanding nuclear fuel cycle that has become national in scope and location.

Superficially, the physical endowment, settlement and skill patterns present in Arizona promise to shorten the span of the nuclear fuel cycle significantly thereby reducing or containing the chances of radioactive accident, sabotage, or theft of materials to a very limited part of the country.

With the prospect of uranium resources nearby, most residents confined to a handful of major population centers in the state, a desert to absorb potential radioactive-laden mistakes and to serve as a burial ground for high-level radioactive wastes (as is currently being claimed in an industry-promoted ERDA publication--76-162, "The Management and Storage of Commercial Power Reactor Wastes"), and Arizona's two major university's turning out a homegrown supply of nuclear engineers, the state seems a perfect place to locate a technology that no one really wants.

Even if things go wrong at PVNGS, it is felt the negative fall out might be more tolerable to the nation generally if it involves only a relatively few people living an unremarkable existence in esoterica.

From a short-term investment point-of-view, the economics of a nuclear Arizona seem sensible, too. With utility rates expected to climb and an energy-guzzling Sun Belt population expected to grow throughout the next generation and a half (the projected lifetime of each atomic reactor), nuclear power seems like a good bet.

As matters now stand, APS owns 29.1 percent of the first three units; Salt River Project (of Arizona), 29.1 percent; Public Service Company of New Mexico, 10.2 percent; El Paso Electric Company, 15.8 percent; and Southern California Edison Company, 15.8 percent. (Arizona Electric Power Cooperative, with 2.4 percent, recently dropped out of the project as did Tucson Gas and Electric earlier.) But, as the Los Angeles Times reports, through a complex contract the L.A. Department of Water will eventually become a partner in ownership of these three units, potentially kicking up California's cut of the complex's atomic generated electricity even further.

Should the two new units be approved, out-of-state interests will own all but APS' 39.1 percent share. Southern California will control the second largest bloc of stock with 32.3 percent; Los Angeles Department of Water and Power, 11.7 percent; San Diego Gas & Electricity Co., 5.2 percent; El Paso Electric Co., 4 percent; Nevada Power Co., 2.2 percent; and five California municipalities -- Anaheim, Burbank, Glendale, Pasadena, and Riverside -- 5.5 percent.

This stock-holding pattern, plus some recent developments in the state's legislature, lends credence to the belief that Arizona is being turned into an energy colony. As the Arizona Daily Star recently noted, California Edison and other out-of-state utilities may eventually own half of the nuclear plant, and a corresponding portion of the electricity produced at Palo Verde will flow beyond the state's borders.

Despite enough sunshine to make it as the first self-sustaining solar state in the union, Arizona is "going nuclear" for a combination of environmental and cultural reasons.

heart of this capital city of a million people, the facility has been under construction upwind at Wintersburg since the summer of 1976.

After examining the U.S. Nuclear Regulatory Commission's "Yellow Pages," NUCLEUS, a publication of Arizonans for Safe Energy, a local anti-nuclear group, reports that as of November, 1977, Palo Verde Unit No. 1 was 15 percent complete; Unit No. 2, 6 percent; and Unit No. 3, less than 1 percent.

Construction permits for two additional, equal size 1270 megawatt each reactors were requested from the Nuclear Regulatory Commission (NRC) early in March, 1978, and knowledgeable observers who have visited the Palo Verde building site say that Arizona Public Service (APS), chief honcho of the entire project, may be thinking of locating as many as ten units at the Wintersburg facility before it is through.

Barring construction delays and cost over-runs, the first of these approximately \$1 billion each reactors will go on line in 1982, with each additional unit scheduled for completion at two-year intervals thereafter through 1990.

Much of the anticipated 6350 megawatt electrical capacity generated by these five PVNGS units will go out-of-state. . .to Southern California, New Mexico, Nevada, Texas and perhaps elsewhere, with the remaining electricity slated to feed what its owners hope will be a continuing and expanding energy appetite for an Arizona programmed for growth.

Approximately 41 percent of the electricity generated by the first three PVNGS units is intended for export to Sun Belt states, and The Arizona Republic, the state's largest and pro-nuclear newspaper, reports that nearly 55 percent of the electricity from the two newly-requested units could go to Southern California.

The ownership pattern at PVNGS suggests that this may be a conservative estimate, however, as California utilities and communities begin to run into strong citizens' opposition in Kern County and at the proposed Sundesert facility near Blythe.

RECIPE: Take one migrant people unfamiliar with
desert ways. Mix with the dream of unlimited,
cost-free growth. Atomize. Result. . .

NUCLEAR STEW: ARIZONA-STYLE*

Mark Reader

PHOENIX: While resistance to nuclear power grows across the country, sunny Arizona is rapidly being transformed into the nuclear axis of the American southwest.

One of the world's largest commercial atomic reactor complexes is under construction 45 miles west of Phoenix, California utilities are mapping the Arizona side of the Colorado River for additional reactor sites, and the nuclear and oil industries are seeking to expand the state's uranium mining industry as the nearby Navajo nation moves to control uranium deposits of its own.

On the other end of the nuclear scale, the federal government and Arizona's political establishment continue to consider the state a prime atomic launchpad in the event of general war:

Nuclear-armed ICBM missiles are in place around Tucson, test sections of the much disputed mobile MX missile system are being dug at Dateland near the Mexican border, Luke and Williams Air Force bases draw military personnel into the Phoenix metropolitan area, and sizeable segments of the great Sonoran Desert continue to be used as a gunnery range and storage bin for unexploded bombs and shells.

Of all of these nuclear and military related projects, the one most critical to the energy and political future of the southwest and the nation at large is the Palo Verde Nuclear Generating Station (PVNGS). A bus ride away from the

*A number of working drafts on this subject, written and revised throughout 1977-78 preceded this final, corrected perspective of Arizona's place in the nuclear fuel cycle.

What does it matter if Federal and State authorities share jurisdiction over a technology that people can't manage?

9. Public Participation. The IRG draft report assigns the public a passive role in the waste management and related issues.

What the IRG has apparently never learned is that the durability and success of any public program depends upon the continuing consent of the governed, and that such consent is not likely to be approximated without broad, and continuing participation in matters which affect people's lives, liberties and ability to pursue happiness.

It is this perceptual failure which makes any proposed nuclear waste program unworkable in the present circumstances, and which is the heart of deep-seated lack of confidence in the policies of governments.

10. Transportation. There is a need to calculate the number of radioactive transactions that are and will be involved as wastes are processed and disposed of. From a social and freedom point of view, the fewer such transactions, the better. Whether the transportation problem can be solved without the need to forfeit human liberties remains in doubt.

11. Implementation, Legislative Requirements, Etc. Should be redrawn with an eye toward altering nuclear policy and considering the human dimension at all points in the process.

Once again, thank you for the opportunity to comment on the draft proposal.

6. Defense High-Level Waste. Acceptable. But, again, must be tied to an international, non-nuclear perspective designed to settle the world's energy requirements equitably.

7. Uranium Mill Tailings. No new uranium mines/mills should be opened; those that are in operation ought to be closed down as quickly as possible.

The proliferation of uranium mines in the American west and elsewhere (Australia, for example) continues to take place without adequate attention being given to the social and security impact of increased radioactive transactions throughout the whole of the fuel cycle.

8. Institutional Issues. This section is marred by the conceit that it is possible/desirable to maintain a time-bound political system for geologically extended periods of time, that scientists and politicians are the key to resolving the nuclear waste and related fuel cycle problems, and that leadership rather than membership, or citizenship, must dominate human relationships.

The nuclear question is now larger than both the federal and the nation-state bargain and must be resolved in new contexts; social scientists and humanists must be included on any planning council; citizens must have a much more sizeable role to play in policy formation than is currently anticipated; and studies of the cultural infrastructure must be made over extended periods of time to assure that the nuclear technology is a humanly manageable one.

5. Tentative Policy Recommendations. The whole of the licensing process should be opened to greater public scrutiny, with the composition of the NRC and the DOE to change by including social scientists, humanists and citizens on its decision-making councils.
- If the representational base of these agencies is expanded as indicated, then and only then might one support an option to extend NRC authority to cover disposal of all radioactive wastes produced in the military/non-military sectors. Reprocessing should be avoided, however.
 - Recommendations intended to construct waste disposal facilities on a regional basis must be re-thought. The difficulty with this approach is that it fails to consider that some human cultures--and not simply some geological formations--may be more appropriate than others to locate waste facilities. The IRG might also consider whether one or several depositories is more suitable to the human condition, given problems of security, transportation and the like. For example, it might be more humanly supportable to confine the nuclear fuel cycle to a limited area as one moves to get out of the nuclear business once and for all times.
- It might be desirable to use some public funds to investigate non-capital intensive and simple technologies for the disposal and/or neutralization of radioactive materials.

The reason for this is not hard to find: it reflects the general myopic view of policy makers about nuclear issues and their continued insistence that the matter is a scientific and technical-- rather than a social and human--one.

3. Proposed Objectives. With the exception of its truncated view of the future, this section seems generally acceptable. Almost all of us would agree that radioactive materials must be isolated from the biosphere forever. Whether this can be done, and at what human cost, is less certain, however.
4. Technical Findings and Conclusions. The IRG's "systems" approach is welcome, but it is bathed in fog. Any systems approach must take into account living social and human systems as well as technological and scientific ones. Again, the exclusion of social scientists and humanists from policy decisions recommended in this and other sections is symptomatic of the limitations and biases of the IRG's "technological approach" to the waste management issue, its complete failure to consider the mechanism of culture by which all knowledge and technologies are produced and sustained, and its misunderstanding of how "social consensus" is to be obtained.

All require full and lengthy public discussion in this and future generations, and no such provisions seem to have been made in the draft report.

The intensity of opposition to present nuclear policy can be measured in proportion to the extent that each person values her or his life, liberty and happiness.

- There is some agreement that the toxicity of radioactive wastes makes no distinction whether produced in the military or civilian programs and thus must be safeguarded under "the same strict safety criteria. . ."

However, there is fundamental disagreement about whether any additional radioactive wastes should be produced in either the military or civilian nuclear programs.

While the IRG may have reviewed "the dimensions and implications" of the radioactive waste issue from the standpoint of the future, some of us

- a. doubt that it has entertained all possibilities (see Reader, "Nuclear Power and the History of the Future"), and
- b. are distressed that non-nuclear, sustainable and more benign energy futures have not been systematically reviewed by the reporting agencies.

The viability and neutrality of the IRG recommendations must remain in doubt given the IRG's continued commitment "to alternative nuclear futures."

2. Interim Strategic Planning Basis. There is a decided lack of involvement, meaningful or otherwise, of social scientists, humanists and citizens at this, and other phases of the planning process.

- b. protect the energy needs of all nation-states and peoples, without resorting to the nuclear option, and
- c. speed up the redistribution of the world's wealth, power and status.

Without such a move, the nuclear fuel cycle will proliferate globally; the nuclear waste problem will become unmanageable, and human life, liberty and happiness will soon be forfeit.

The job of statesmanship in this part of the century is to get us out of, not further into, the Nuclear Age.

III. THE DRAFT

Insofar as the policies recommended in the draft are inadequate, it is because they fail to take into account the human and social predicament in which we find ourselves. The following comments are to be read within this broader life and death context:

1. Relationship to Nuclear Power. How, and who, is to inform the President "of the nature and intensity of public views" on the nuclear waste issue when the IRG itself seems not to understand it?

For the record, what many of us are telling both the IRG and the President is that current nuclear policy is dead wrong and that it is likely to get us all killed, sooner rather than later, unless it is changed.

the world, and that both can be regarded as the building blocks of a new culture which can neither be sustained nor ended.

Accordingly, the policy of the United States and other governments must be to abandon the Atomic Age as quickly as possible.

As I have argued in materials previously submitted, and in a new piece ("Energy and Peace: Toward an Ethical Energy Policy,") present policy cuts in exactly the opposite direction, pushing the world daily closer to the threshold of nuclear extinction.

II. POLICY ALTERNATIVES

Given an understanding of the issues involved, plus rapidly escalating citizens' resistance to an enlargement of any part of the nuclear fuel cycle (as evidenced, in part, by the citizens' comments already received by the IRG as well as the force of recent events in Austria, Sweden, etc.), it is essential that the following policy alternatives be implemented immediately:

1. A pause, or moratorium to the further extension of the fission option, so that both the quantities of radioactive wastes, and the politics among and within nations, can be stabilized.
2. Widespread public discussion of the nation's and the world's energy future.
3. Opening of discussion at the global and the governmental level of how to
 - a. universalize a nuclear moratorium

CRITIQUE OF REPORT TO THE PRESIDENT
BY THE INTERAGENCY REVIEW GROUP
CN
NUCLEAR WASTE MANAGEMENT

October 1978
TID-28817 (Draft) *

Mark Reader

I should like to thank the Interagency Review Group for extending the time period for comment on its draft report. It makes it possible for people like myself to comment on a matter of public policy which involves the fate of our children and of all humanity in this and subsequent generations.

I. POLICY CRITIQUE

My fundamental objections to the draft report revolve around matters of policy upon which much of the concrete recommendations are predicated.

The report attempts to resolve the nuclear waste problem without (a) controlling the amount and sources of increased production of radioactive materials, and (b) attempting to deal with the fundamental question of what type of life people everywhere and anywhere must lead to support a nuclear fuel cycle which is being located at more and more places on the face of the earth.

More specifically, I see no evidence that either the IRG, the DOE or the President himself has given serious thought to the implications of their nuclear policy on the critical human issues of war and peace, freedom and slavery, equality and inequality and ecological harmony or discontinuity for Americans, and people everywhere, in this and future generations.

What neither the IRG nor the President seem to understand is that the nuclear waste problem is part of the broader problems posed by a nuclear fuel cycle which is growing exponentially in this country and throughout

* With the exception of some phrases designed to explain textual references this, in substance, is the critique as sent to IRG participants John Deutsch, Roger LeBassie and William Homberg, as well as President Jimmy Carter, on November 27, 1978.

cry around which much of global and domestic politics will revolve in the months and years ahead.

At long last -- as the control aspects of nuclear power are being felt in higher utility rates, growing fears of nuclear accident-theft-sabotage, more than the random denial of civil liberties and perpetual elite rule -- people are beginning to tell their governments that they cannot live in freedom or security with nuclear weapons or nuclear reactors at their backdoors and that politicians everywhere will simply have to find ways of solving the global energy/political crisis without laying disaster certain onto the human species.

More specifically, an emerging coalition of environmental, peace, citizens, religious and devolution groups are beginning to realize that if the governments of the world were really thinking clearly about their commitment to global peace and freedom they would give up the nuclear illusion and try to settle the world's energy crisis by redistributing the world's wealth and power.

Barring such a move, the burden of saving the species from disaster will, as it so often has in this century, fall to common people in community after community who, in their outrage and horror at the real prospect of the radioactive contamination of the earth, will never accede to humanity's and the planet's ruin.

We are back to square one. It is the start of protest-time all over again.

liberty, but the possibility that homo sapiens will end up dead if it tries to do without it.

A peasant's logic this! "Why not accept large-scale human suffering and destruction rather than taking the impossible, because unproven, chance of promoting life by changing one's ways?"

It is this twisted thinking which has the effect of dumping a fatal and insoluble problem into the mainstream of human life that now complicates the nuclear paradox beyond redemption and which, thankfully, also makes it possible to rise above it.

It explains why the policies of the nuclear-have nations continue to be received with skepticism by nuclear have-nots intent upon securing equality within the nation-state system and by citizens concerned about maintaining their lives and liberties as nuclear reactors are introduced into their communities.

And it also explains why nuclear proponents have chosen to try to enlarge the world's energy-economic pie while, at the same time, risking a nuclear security backlash which can only result in nuclear catastrophe at some point and the marked decline in human liberty along the way.

By making an absurd demand at the control end of the nuclear paradox, nuclear proponents have succeeded in doing what the Ban-the-Bomb and modern peace movements have never been able to do:

They have convinced growing numbers of people that the only way out of the deadly nuclear dilemma is to repeal the Nuclear Age.

This was the central message being delivered at Seabrook on April 30 (1977) and during the first week in May (1977), and this will become the rallying

it is already losing through a widening of the arena of nuclear conflict.

The nuclear genie has gotten out of the bottle and however impressive any negotiated short-term nuclear arms settlements and human rights achievements may seem they will more than likely be off-set by what now appears to be a comprehensive and worldwide need for total social control to prevent conflict at any point in what is fast-becoming the global nuclear fuel cycle.

But the paradox alone does not account for the planet's worsening nuclear situation. After all, as Alexander demonstrated long ago, we could -- had we the imagination and determination to do so -- reject the terms of the paradox, step back from it and cut the Gordian knot.

All we would have to do to ease our nuclear perplexity is end our moral ambivalence toward the atom by declaring quits of the game.

But this is precisely what no nation-state seems willing or able to do at the present time, in part because governmental leaders are too busy worrying about the global energy-crisis to see the paradox at all, and in part because renouncing the nuclear system means ending the system of inequality and structural violence upon which it is based.

All official nuclear policies, then, are being made within the context of the economic, political and social status quo.

What dominates the concerns of nation-state actors is that civilization itself may well come apart, with cataclysmic consequences to humankind, if the world abandons its growing nuclear commitment. As much was admitted in London in May (1977) when the head-of-states re-affirmed their nuclear ties.

The motive force in back of nation-state nuclear decisions, then, is not the certainty that nuclear power will take a heavy toll of human life and

of nuclear fuels will not be interrupted to those nations grown dependent upon U.S. shipments, that the fission option will be enlarged as a means of dealing with the world's (including its own) energy crisis, and that the United States will return to a policy of championing the cause of human rights throughout the world.

In general, this policy has met with approval by the nuclear haves and suspicion by the nuclear have-nots, with attitudes being shaped according to the nuclear pecking order.

Among the nuclear have nations it now appears that American-Russian weapons strength will be negotiated downward, that the terms of reactor sales and operation will be formalized and that some gains in human freedom will be sanctioned, especially in Black Africa where they would be realized anyway with or without Big Power intervention.

But not everything is coming up rosy. On the down side of the nuclear equation, the Japanese have threatened to fire up their experimental breeder reactor (in response to American cautions against so doing) thereby taking the world one step further into an unmanageable and unliveable plutonium future; the French and Germans continue to push their nuclear deals in Pakistan, Iran and Brazil, a harbinger of nuclear politics-to-come; and widespread resistance to nuclear technology grows on both sides of the Atlantic.

Thus, what at first blush looks like genuine diplomatic breakthroughs to peace, freedom and nuclear sanity, on more sober reflection turns out to be nothing of the kind.

From a global perspective, what the world will gain from limited weapons reductions and a more rationalized and institutionalized nuclear reactor policy

This latter opportunity has now been provided by the nuclear powers' careless export of nuclear reactors and nuclear technologies as a way of meeting the world's inflated energy demands and of keeping their own overheated economies going.

Having democratized and oversold their nuclear technologies so that everyone -- the disorganized and the organized alike -- can both use and abuse atomic energy, the nuclear powers have de-stabilized the nation-state system, causing the pressure for greater social control to rise even further.

Nuclear reactor proliferation, then, has intensified the terms of the nuclear dilemma. It has created the need, and with it the demand, for more extensive and more direct controls over the everyday lives of people in ways they could never anticipate as long as nuclear problems were confined to a limited number of governments and elites, and it has quickened and deepened the drive toward liberty and equality on the part of non-nuclear nation-states and citizens, both of whom perceive the control mechanisms that invariably accompany the atom.

The most urgent call for greater nuclear controls has come from the United States. Faced with rising opposition to nuclear power and alarmed at both the soaring costs of the arms race and the potential negative consequences of the uncontrolled sale and operation of reactors in what it considers unstable and technologically immature nations, the Carter Administration has moved for a swift nuclear weapons accord with the Soviets, deferred -- but not wholly abandoned -- its commitment to the breeder reactor, and declared its intention of preventing the nuclear have-not nations from using their potential or newly-acquired nuclear techniques to make atomic bombs.

And on a related front, in order to dispel fears that its moves are designed to maintain American nuclear supremacy, it has moved to guarantee that supplies

to be, inimical to human survival.

The first of these is what physicist Alvin Weinberg has thought of as the need for "eternal vigilance" to guard against the prospect of nuclear war, accident and terror. . .something which ordinary people experience as totalitarian rule; and the second, is the necessity of limiting the number of nuclear players and containing their actions so that nuclear outcomes can be predicted. . .thereby assuring that people living within nuclear nation-states and the nation-state system itself is (and are) neither equal nor free.

The paradox, then, generates the very conflict which the nuclear option must avoid.

Historically, the introduction of nuclear weapons into the human community has been greeted with envy and resentment by nation-states seeking equality and/or independence.

Early in the game of global nuclear power politics, the nuclear "have-not" nations concluded that Soviet-American nuclear weapons dominance placed them in a position of dependency which might be partially overcome by playing off the fears of one nuclear superpower against the other.

Accordingly, the non-nuclear nations used the big-power nuclear weapons stalemate to transform their own economies and/or to build up their own non-nuclear military systems, usually with Big Power assistance.

Rarely, however, were concessions from nuclear "haves" considered as ends in themselves. Instead, they were seen as stepping-stones toward achieving de facto nation-state autonomy and equality -- minimally, by capitalizing on the balance of terror stand off; more remotely, by securing an equivalent to full nuclear parity.

Moral Ambivalence and the Paradox
of Nuclear Power*

Mark Reader

There is a new dynamic at work in human affairs. Ironically, it marks the culmination of a paradox built into the Nuclear Age, fatal to humankind and only recently become critical with the spread of nuclear technologies around the world.

The paradox is this: nuclear power creates the unattainable and undesirable need for permanent and total social control as a means of avoiding nuclear catastrophe while at the same time generating those counterforces which prevent its realization.

Whether in the form of nuclear weapons or as wastes produced in the operation of nuclear reactors, fission power's highly-toxic, extremely long-lasting payload requires people who use it to lead lives where contingency and error are banished forever ... hardly a human possibility.

On the most negative side of the nuclear paradox, the presence of atomic weapons in the human community already has led to the rise of authoritarian regimes in Western democracies, retarded the cause of human liberty in the Soviet Union, and established stultifying U.S.--U.S.S.R. hegemony in world politics.

And more recently, as nuclear reactors have begun to proliferate around the earth, the pressure for total social control has increased and become universalized, moving out of more limited political and governmental circles and into communities-at-large.

Nuclear proliferation is becoming the world's number one social problem.

From the onset of the Nuclear Age, the controls demanded by the nuclear paradox have required two social arrangements which have been, and will continue

*An October 1977 paper based on oral remarks presented on April 22, 1977 and October 4, 1977 at Department of Political Science colloquia, Arizona State University. Reprinted in part as "The Social Fallout of Nuclear Power," WIR, (March 16, 1978).