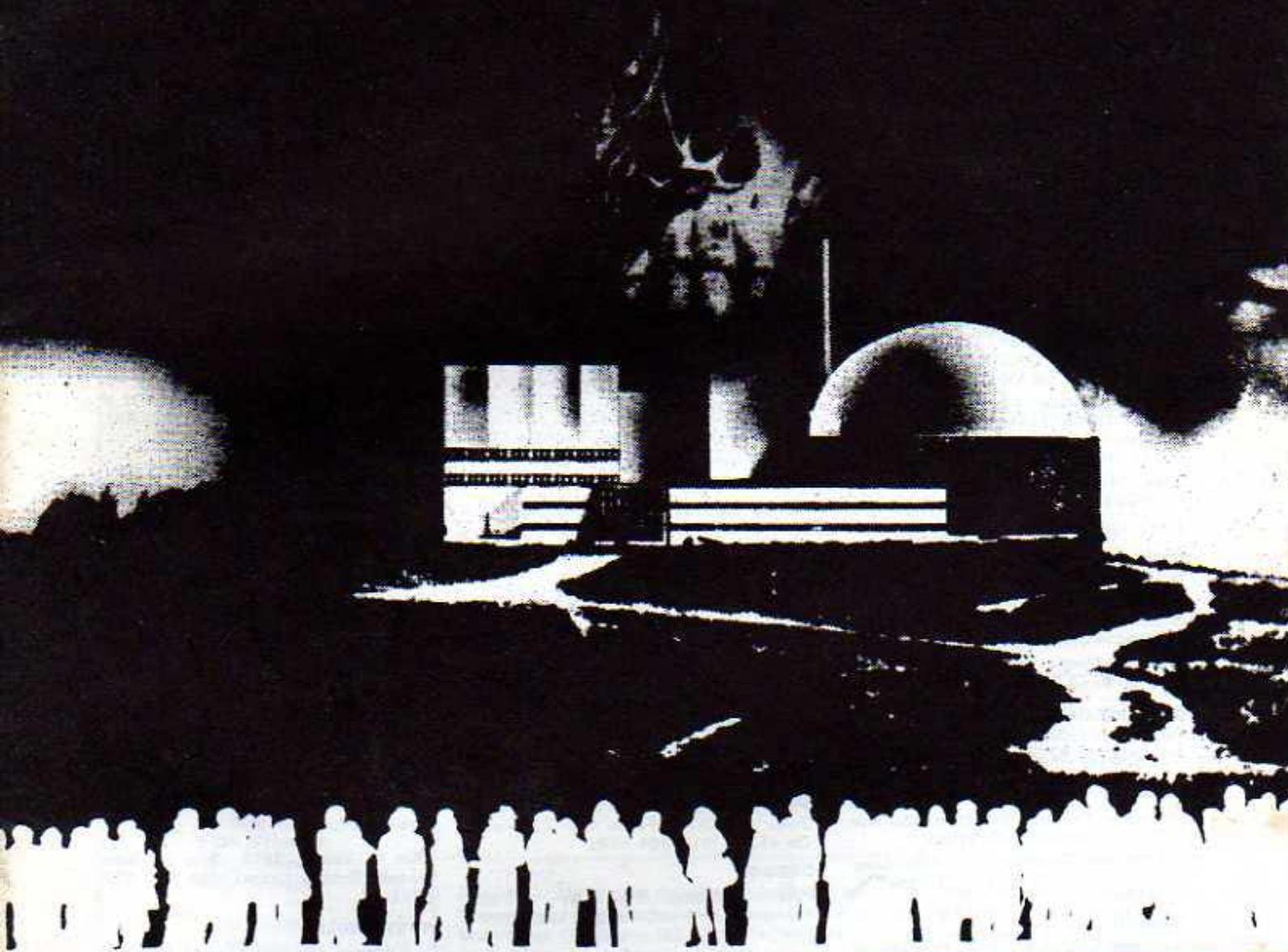


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SCIENCE FOR THE PEOPLE



NUCLEAR POWER: THE PEOPLE'S REACTION

Anti-Nuke Struggles in Europe, Japan & the US
Economics of Nukes Songs from Seabrook

Also: Farmers vs. Tokyo Airport SftP in China

Science for the People is an organization of people involved or interested in science and technology-related issues, whose activities are directed at: 1) exposing the class control of science and technology, 2) organizing campaigns which criticize, challenge and propose alternatives to the present uses of science and technology, and 3) developing a political strategy by which people in the technical strata can ally with other progressive forces in society. SftP opposes the ideologies of sexism, racism, elitism and their practice, and holds an anti-imperialist world-view. Membership in SftP is defined as subscribing to the magazine and/or actively participating in local SftP activities.

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about this issue



This issue of the magazine focuses on the organized struggles of people united against corporate and state power. The anti-nuke struggle and the fight against the New Tokyo International Airport at Narita are attempts to democratize decision-making and to oppose the direction of capitalist economic development. In each case, the complicity and common interests of the state (be it through the police, a regulatory agency, or the courts) and of the capitalists, is very clear.

The Narita Airport and European anti-nuke battles share a degree of militancy thus far unparalleled by the US anti-nuke action. Furthermore, both Narita and the European anti-nuke campaigns are made up of a coalition of workers, farmers and students; a similar coalition does not yet exist in the US anti-nuke movement. Although all of the struggles are over similar issues, the tactical differences reflect differences in political awareness and ideology.

While both the Japanese and European struggles focus on specific issues, it appears that many of the activists view their issue in its larger political-economic context. Both movements seem to be explicitly anti-capitalist, seeing the airport and nuclear power as means by which capitalists maintain power and maximize profits.

Such an analysis is beginning to be formed by participants in the US anti-nuke movement. However, one thing the people fighting the airport and those fighting nuclear power (in both the US and Europe) all share is a

strong opposition to the devastation and destruction of the land that such nearsighted "development" brings.

Nuclear power is suffering many economic setbacks in the US — drastic cost increases in plant construction and few orders for new plants — as authors Bowring, Folbre, Michak, and Harris show in their chapter from the forthcoming book *No Nukes*. This has happened in spite of the built-in economic incentives for developing nuclear power. Public pressure for safer, cleaner reactors is partly responsible for the slowdown in nuclear plant construction.

But will this slowdown continue? Another "energy crisis," over shortages made more severe by pro-nuclear economic interests (often tied to those of coal and oil) could suddenly make nuclear power seem more necessary. As a result, Federal subsidies for the hidden costs of nuclear power generation, such as fuel reprocessing, waste disposal, and reduced liability for accidents, would grow even further and in turn would add to the attractiveness of nuclear power. The anti-nuclear movement has spent most of its effort opposing nukes, and the development of renewable energy sources, such as solar, has just started. Thus, it is premature to hope for, much less predict, the demise of nuclear power.

This lends importance to the Current Opinion on the latest Seabrook demonstration, which discusses the potential of the no-nuke movement for fostering widespread political and economic change. □

SPREAD THE WORD

One of the strengths of Science for the People is its magazine readership. As the number of subscribers and readers goes up, so will the financial stability and political energy of the organization improve.

You can help in two ways:

- Send us the address of a friend (or friends) who might want to subscribe. We'll send them a free copy of the magazine.
- Introduce a local bookstore to SftP and offer to deliver a magazine on consignment. They get the magazine for 40% off our cover price, and pay us only when a magazine is sold. For more details and an introductory distribution packet, write the SftP Distribution Committee, c/o Science for the People, 897 Main street, Cambridge, MA 02139.

letters



Dear SftP,

I very much appreciate the material on sexism and genetic research. I would like to see more info on current socialist views on anthropology and the historical development of the human species re division of labour and the effects of greater technology on the class struggle, and vice-versa (i.e., a forward-looking attitude to the advancements of 20th century and 21st century science and the boon to humankind of this under a socialist system).

I have detected faint glimmerings of anti-Sovietism in recent issues. I hope these are mistaken aberrations which will not continue. Anti-Sovietism is the first weapon that the capitalists are using in their fight against socialist principles.

SftP should beware of splittive tactics practised by some elements of the petit bourgeoisie, notably those who follow a narrow Maoist line which earns the contempt of the working-class and trade union movement in most countries. We have the problem here in Australia of the mass media encouraging Maoist sections of the petit bourgeoisie (students, drop-outs, uninformed and naive hippies) to attack the socialist movement, with the result that they feed the big monopoly capitalist machine, and give Fraser more ammunition.

Keep up the good work, though!!

J.H.
Australia

Dear SftP,

Keep up the good work — I think that your new format is more readable — as a centre interested in causes of underdevelopment both in Canada and outside, we would like to see coverage of Third World events linked more integrally to similar (or causal) developments in more advanced industrial areas of the world (i.e., health issues in Zimbabwe are not unrelated to race/class questions in health care for immigrants to Canada and the U.S.)

Development Education Centre
Toronto, Ontario

Dear SftP,

I work in a lab where many people have access to SftP. Although I am in general satisfied with your work, several people who formerly supported and read *SftP* have voiced strong criticisms

of the focus of recent issues. The article that seems to stand out in people's minds when they criticize *SftP* is the Lesbian Health Care article.

This article, and several others, indicate to them that the focus of SftP has become too diffuse. I think that they would prefer not having to deal with such emotional (and, to their minds, nonscientific) issues such as lesbianism. The general critique is that the magazine becomes *too* political and not scientific enough, often giving undue emphasis to issues that are experienced by a small minority and thus not applicable to the average reader.

Last year, five members of the lab I work in joined in to become members of SftP. Two of these five have decided not to support the renewal this year, and a third is only marginally supportive. I am concerned with this trend and think that it may reflect a more general phenomenon.

I personally wish to express support for your stance on the so-called "non-scientific" articles and am glad to be exposed to any issue that is related to science. I support SftP on the theoretical basis that there is no other group that I am aware of that attempts to be critical of the scientific establishment from a "leftist" viewpoint. But I would caution against the very real potential to alienate many of your members. As in any group, there is the dichotomy of affirming and expressing those issues and beliefs which the group feels important and the necessity of trying to broaden the foundation of the group by including more members. I have no ready answer to the problem, and wish you luck and my support in your continuing efforts to examine how science relates to people and our society.

A reader

Dear SftP,

I find the magazine an indispensable aid to my understanding of the class struggle in the Caribbean. Because of foreign exchange restrictions many of us who would like to cannot subscribe, but your issues to me are all heavily "thumbed" by my comrades — whether or not they have a scientific background.

Clive Thomas
Guyana

Dear SftP:

I find your magazine to be both enlightening and terribly provocative. As an example of the latter: until I began to read *SftP* I had always considered myself to be quite broadminded, a "liberal" in the traditional sense. However, I must now candidly admit that my opinions with respect to women were not so liberal. Unconsciously, I had always accepted the traditional American male — and possibly the universal male — view of women as being "alright as long as they had a good man around". And frankly, I never felt any need to subject that opinion to a thorough and rigid analysis. Now, however, after reading many of the articles in SftP which were written by and about women, I've been forced to submit that traditionalist view to a close analysis and I can tell you that it came up woefully lacking.

This is not to say, however, that I'm now ready to accept the idea of *any* woman moving next door to me, and before I'd permit my son to marry one of them she would have to undergo a very thorough background check. But I'm now all for the idea of them having the right to vote, work, wear pants, drive a car, and even smoke — as long as they don't let the cigarettes dangle out of the corners of their mouths as some men do! Hey, of course I'm only putting you on! But, seriously, my opinions and views about women have broadened a great deal and I now have a much greater understanding and empathy for their particular problems, as a result of reading SftP. Thanks! I needed that!

My suggestions for the magazine are these: I would like to see more articles on the peculiar problems of black women in the medical field, both as practitioners and patients. I'm sure it's common knowledge that black women have problems that are peculiar to them both from the standpoint of being black and from the standpoint of being females, and I feel that perhaps those problems might be relieved somewhat if they were brought out into the open and discussed in a public forum like SftP.

LETTERS, continued on page 36

ATOMKRAFT—NEIN DANKE

The Anti-Nuke Movement in Germany and Western Europe

The movement against nuclear energy in West Germany had its beginnings in Whyl, a small town on the French/Swiss/German border. The protests began on a small scale after the news of the planned atomic energy plant was made public in 1971. The movement was triggered by students and others from the nearby city of Freiburg and grew stronger as the farmers realized how severely their land and agriculture would be affected. Whyl, located in the rural area Kaiserstuhl/Elsass, is well-known for its wine, among the finest in Germany. At the beginning of the movement the French and German farmers were primarily concerned about the dangers that pollution would pose for local agriculture. Later on they grew conscious of the threat that radioactivity represents for people everywhere. They now demand that *all* nuclear energy plants be banned.

Markolsheim

The occupation of a planned lead factory in Markolsheim, France on the German border close to Whyl, was very important for the following no-nuke struggles. After wide protests, which failed to stop the lead plant, the construction officially began on Sept. 20, 1974. On the same day hundreds of people from both sides of the border moved onto the site, bringing along tents and trailers, preventing construction crews from working. During the course of their two-month occupation they built chicken pens, hitched up an electricity generator, dug a well and built a *Freundschaftshaus*

This article is a collective effort of four anti-nuclear activists from Hamburg.

(Friendship House), literally cementing friendship between people from both sides of the border.

German and French people shared "guard-duty". Through the use of walkie-talkies, church bells and telephone calls, over 1000 people could be organized within a short time to support the occupiers by blocking off roads leading to the site in case the police should try to make a raid. At one point the French police actually tried to close the border crossing to all occupiers, but by opposing the police the people forced them to reopen. The next day the German occupiers were able to return to the site.

The construction permit was revoked by the French government in February 1975. The environmentalist resistance had won its first victory!

Whyl

In the meantime the protesters at Whyl hadn't been inactive. By means of protest marches, tractor demonstrations and information stands, as well as house-to-house canvassing, they had worked to raise people's knowledge concerning the dangers of atomic energy plants. The residents of this area are traditionally quite conservative, but their political consciousness was changed somewhat in 1973, when safety and catastrophe plans — normally labelled "Top-Secret" and kept under lock and key — were stolen from a government desk and published. Due to this shock and the experience of the occupation in Markolsheim, people were alert when — despite protests and public hearings — construction of the nuke in Whyl began on February 17, 1975.

The following day a few hundred people went to the construction site to try to prevent further construction. They were able to save some of the trees by standing in front of the bulldozers, after having cut a hole in the

fence to gain access to the site. Tents and trailers were brought along. Despite freezing weather the occupiers stayed on the site until February 20, when they were forced off by a brutal police attack. From the 150 people who had spent the night occupying, 54 were arrested, with the threatening prospect of staying some months in jail. All of those arrested were "out-of-towners", a part of the government's strategy to split the movement.

In answer to this police action, a demonstration was called for on February 23. About 25,000 people turned up, outraged over the police brutality. In a peaceful demonstration they tore down the barbed wire and fences. 5000 demonstrators occupied the site. Despite the freezing cold 1500 stayed overnight to make sure that the occupation would be successful. Following the example of Markolsheim they built a *Freundshaftshaus* and worked out a warning system to prevent the police from surprising them in an overnight raid.

The one-and-a-half-year occupation at Whyl was important for the growth and strength of the movement. People met each night in the *Freundshaftshaus* to sing and dance and make music. In the course of time the *Volkshochschule* (People's Free School) came into

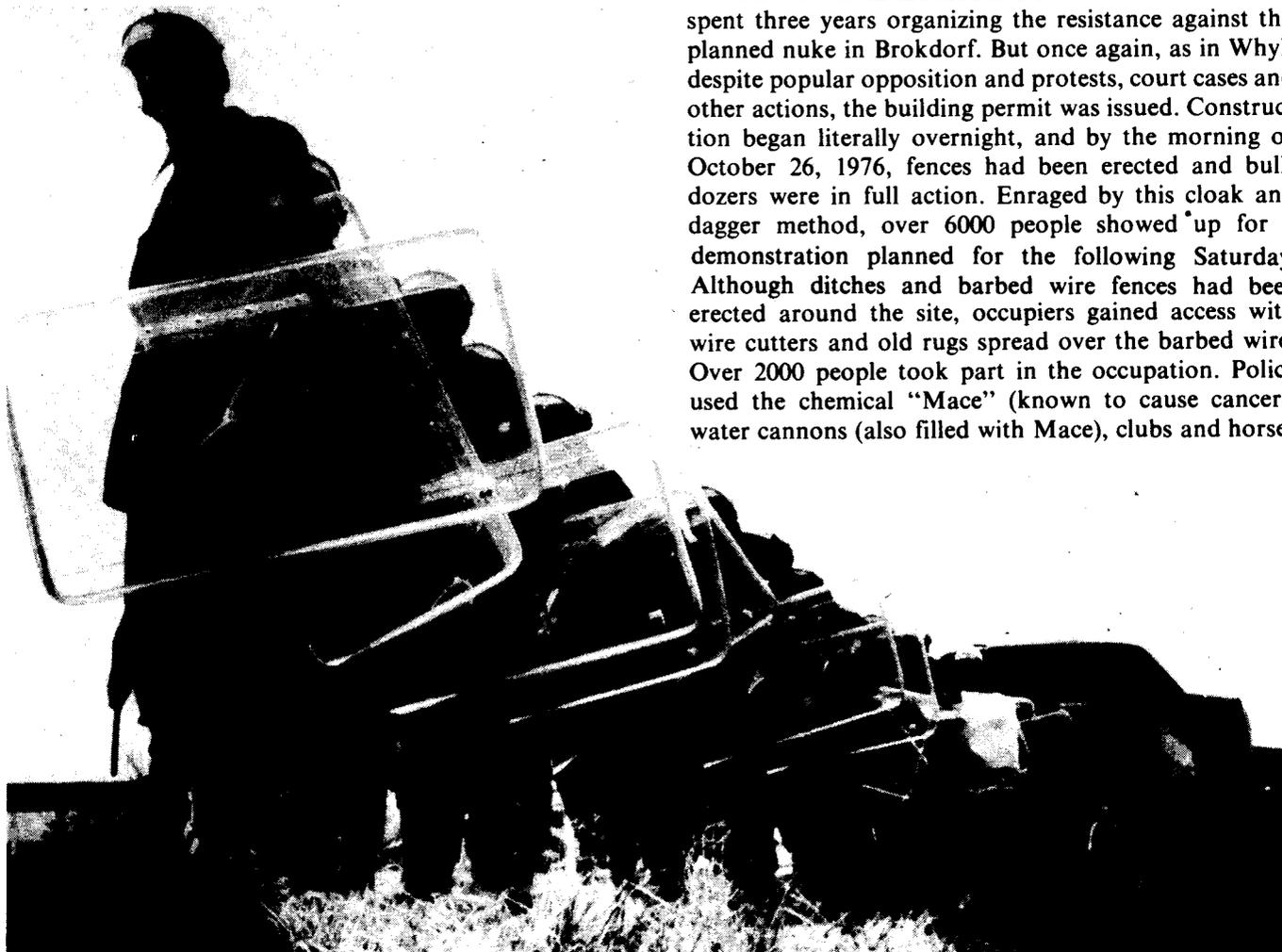
being. Young and old, farmers and long-hairs, met in the evenings to talk about the dangers of nukes and radioactivity. They began to study their own his- and her-story and their own culture, to seek alternatives to this suicidal technology.

In April 1975 the Whyl group reached an agreement with the German government to leave the site pending a court ruling. The government agreed not to begin construction. On March 14, 1977 the courts decided that the nuke could *not* be built as planned. The design would have to be altered. (American scientists who testified at the hearings had a very positive influence.) Although it wasn't stated that *no* plant would be built, there have been no further moves on the part of the government to begin building.

This occupation in Whyl was to influence others. There were thereafter small demonstrations in Malville, France; Kaiseraugst, Switzerland; Seabrook, USA. The first mass demonstration after Whyl was in Brokdorf, a small town in the north, close to Hamburg.

Brokdorf

Farmers from the area and students from Hamburg spent three years organizing the resistance against the planned nuke in Brokdorf. But once again, as in Whyl, despite popular opposition and protests, court cases and other actions, the building permit was issued. Construction began literally overnight, and by the morning of October 26, 1976, fences had been erected and bulldozers were in full action. Enraged by this cloak and dagger method, over 6000 people showed up for a demonstration planned for the following Saturday. Although ditches and barbed wire fences had been erected around the site, occupiers gained access with wire cutters and old rugs spread over the barbed wire. Over 2000 people took part in the occupation. Police used the chemical "Mace" (known to cause cancer), water cannons (also filled with Mace), clubs and horses



that trampled groups of helpless demonstrators. The reaction of the occupiers was nonviolent, yet all refused to leave the occupied areas. One of the local Lutheran ministers, also occupying the site, made an agreement with the police that the demonstrators would be allowed to stay until the next day. Yet as darkness fell and the press had gone home, police troops returned, brutally beating and clubbing, burning tents and sleeping bags and arresting 55 of the remaining 500. Many were injured and had to be treated at the local hospitals.

As a protest against this brutality, about 2000 people gathered spontaneously the next day at Brokdorf. Their banners bore slogans such as "We're coming back and next time we'll be more."

It took two weeks to organize the next demonstration at Brokdorf, this time not only against nuclear energy, but also against police brutality. In the meantime the entire construction site had been turned into a huge fortress, moats up to 8 yards wide surrounding the site, fences 2 yards high, topped with rolls of massive barbed wire, concrete walls over 5 inches thick.

Over 30,000 people arrived, despite roadblocks 6 miles away from the site. The day was spent trying to cut down the fences. Many were equipped with gasmasks, motorcycle helmets and waterproof clothes to protect them from the police.

After hours of work there was a small hole made in the fence, but no one was able to enter, due to the violence of the police, who were attacking with water cannons, tear gas and chemical Mace from the inside of the fortress. Helicopters dropped smoke-and-teargas-bombs, especially aiming at those on their way home, often families with small children.

A period of intense discussion followed. Many had been injured and arrested. The open police brutality shocked and angered many people. Nuclear energy opponents began to organize themselves in *Buergerinitiativen* (citizen action groups against nukes), actively discussing and preparing the strategy of our struggle with our own heads and hands. We began using leaflets, theater, video, film and demonstrations to activate the community, in small towns as well as in large cities. Socialists, communists, social-democrats, pacifists, conservatives, as well as anarchists worked together with the common goal of stopping nuclear energy.

The next demonstration, the so-called "Brokdorf III" was set for February 19, 1977. Shortly before it took place, the demonstration was ruled illegal by the high court of the state. Newspapers and television began a massive campaign to discredit the demonstrators as a group of violent criminals and terrorists (a campaign which has continued to the present day). The resulting fear led to a split in the movement. Two demonstrations were planned, one in Itzehoe, the regional capital, the other in Brokdorf, site of the planned nuke. The demonstration in Itzehoe wasn't forbidden, taking on

the character of a festival, with speeches, songs, and a march through the city. Over 20,000 people took part in the day-long festivities.

Over 40,000 people took part in the demonstration at Brokdorf, despite road-blocks by police armed with submachine guns, and an overhanging cloud of fear and tension. It was a peaceful demonstration, ending at the police barricades 2 miles before the site where speeches were held, accompanied by aluminum kites and painted faces. This demonstration was an important victory for the movement and proof that even under such circumstances people are willing to risk jail sentences to demand their right to demonstrate. On this one single day 60,000 people were on the streets to demonstrate against nuclear energy!

Grohnde

Simultaneously about 1000 people occupied the site of the planned nuclear energy plant in Grohnde, close to Hannover, by cutting a hole in the fence and peacefully entering the area. Forced off by police troops who quickly arrived, the occupiers promised to return. Attention turned to Grohnde and a mass demonstration was planned for March 19, 1977.

Well organized in small groups, about 20,000 people prepared to cut down the fences of Grohnde, which had been transformed into a massive fortress as in Brokdorf. Saws, torches, wire-cutters, ropes and aluminum kites to keep off helicopters, plus protective clothing, gasmasks and motorcycle helmets, made it possible, despite water cannons and Mace, to tug out a segment of the fence with ropes. But while the fence was being attacked by our "Tug of War", the police began violently attacking the demonstrators. Hundreds were injured as police overran surrounding fields, clubbing and macing, trampling fleeing demonstrators with mounted police units.

Over one hundred were arrested. Unlike Seabrook, it is a common practice in Germany to pick out a few from the many to bring to trial. The fear of the individual is largely that of being alone, which is the case when 100 are to bear the weight of verdicts meant for 20,000. Especially critical is the situation of 6 nuclear energy opponents from Grohnde who were charged with attempted manslaughter. The charge was dropped due to "lack of evidence", but they still face sentences of over a year.

Malville, France

As plans for the demonstration against the Fast Breeder in France took shape there was no question that the German movement would also support the French resistance, as had the French, Danish and Dutch in Germany. People from all countries in Europe went to Mal-

ville, unaware of what would happen. During this demonstration of 60,000 people, the French National Guard shot explosive grenades into the crowd. One person was killed. Many were injured. One German returned without a hand, another missing his foot. It was a hard and shocking truth that the government will try to build nukes over our dead bodies, if it need be.

Kalkar

On September 24, 1977, German and Dutch nuclear energy opponents organized a demonstration against the planned Fast Breeder in Kalkar, on the Dutch/German border. As usual, problems arose. This time police set up roadblocks, blocking off the Autobahnen, the major thruways, preventing thousands

formed the *Anti-Atomkraft* movement here in West Germany. The demonstrations which we have mentioned can perhaps give a brief sketch of how the movement has developed during the last few years. Aside from mass demonstrations, we have developed other forms of direct action, which have helped to strengthen and enrich the resistance.

No-Nuke Villages

Following the mass demonstrations in both Grohnde and Brokdorf we realized that it is important to continue the struggle on a day-to-day basis, and not only once or twice a year at a mass protest. The idea of a no-nuke camp was first realized at Grohnde. In May of last year several hundred people occupied the meadows



of people from even reaching the demonstration. Trains were stopped by helicopters, and many were arrested before they even reached the township.

Our "weapons" were confiscated: helmets, gas goggles, waterproof clothing, even the lemons which help to ease the burning of teargas in one's lungs. Over 50,000 people proved that the struggle continues despite the rising "police state."

Almelo, Netherlands

Half a year later 50,000 people from all parts of Europe protested against plans to enlarge the Uranium Enrichment Center in Almelo, Netherlands. This demonstration was peaceful, with songs and music, painted faces, and theater groups performing on the streets. There was no clash with the police, partly because of the liberal tradition in Holland, and due to the fact that there was no intention to occupy the plant, already in full use and totally radioactive.

Of course there were many more actions and demonstrations, events and happenings which have

close to the fortified site, the planned site for the cooling towers for the nuke. People brought along tents and camping gear, but in the course of time a real "village" came into being, with wooden houses, as the *Freundschaftshaus* in Whyll and a kitchen and bakery which provided meals for the numerous occupiers. The mostly young people occupying the meadows were able to develop a good relationship with farmers and other residents of the area. A similar village was erected next to the construction site at Brokdorf. Shortly thereafter both villages were demolished by the police, and the names of the occupiers registered in the central computers of the German police. The houses we had built were burned to the ground.

In Gorleben, where the central uranium reprocessing plant for all of Germany is planned, the resistance has slowly and steadily developed over the last years. Opponents have planted trees and gardens on the planned site, and have built a beautiful children's playground. It has been possible to develop a constructive solidarity with the people of the area by establishing positive alternatives. An ecological consciousness, up to



"Atomic Power Hurts People and Land"

At first, Whyl Farmers were primarily concerned about the dangers that pollution would pose for local agriculture. Later on, they grew conscious of the threat that radioactivity represents for people everywhere. They now demand that *all* nuclear power plants be banned.

now quite failing in Germany, has developed out of the no-nuke movement. New attitudes toward nature, technology and growth can be found. Owners of land in Gorleben have refused to sell to the government. Many of them have "leased" land to *Buergerinitiativen* from all over the country, who are actively taking part in the struggle.

Up to now, the anti-nuke movement in Germany has succeeded in at least temporarily stopping construction of the planned nuclear energy plants in Whyl, Brokdorf, Grohnde and Esenshamm. The question as to whether or not it is constitutional to build fast breeders will have to be taken to the Supreme Court. We have won time and have been able to provoke discussion and debate against nuclear energy. We have become larger and stronger. And we have cost the utility companies a great deal of money as well as grey hairs. The Nuclear Energy Program has been drastically reduced due to citizen resistance to these plans. At the same time government research projects for sun and wind energy have been expanded.

Over two million people are organized in 38,000 *Buergerinitiativen* all over the country. Tens of thousands have taken part in the direct action resistance. The character of the mass-demonstrations has changed in the course of time: the "military" demonstrations, with their similarities to civil war, have proven to be no solution, for we have no chance against the violence of the police. But the intention to continue our struggle against nuclear energy remains. The resistance has learned to take on many different forms.

One of these forms is a boycott against the electricity companies. Many people have already begun refusing to pay for the construction of nuclear energy plants by not paying the 10% which goes for nukes. Hopefully it will soon be more who pay only 90% of their utility bills.



Whyl — "Today fish — tomorrow us."

Posters, postcards, film and video, as well as our music make up the new Anti-Atom-Culture. As a part of this one must also include Switzerland's Radio Goesgen, an illegal radio station which regularly broadcasts anti-nuke news and music. Street theater and hundreds of different newspapers are also important modes of communication.

Another important development is *Aktionskreis Leben*. This is a new opposition within the unions. The people working with this group are trying to get the unions to work for broader goals. Instead of discussing only the issues of wages and jobs, we must begin to work for the stopping of nuclear energy, for disarmament and for a more human quality to our lives.

The latest development is candidacy for the city council in various cities. The "Green Lists" are a direct result of the no-nuke movement here. These people are strictly ecologically oriented and have been successful in various rural areas already. The *Bunte Liste*, the so-called "Colorful List", is a conglomeration of nuclear energy opponents, women's groups, teachers, tenant groups, homosexuals, prison groups and other issue-oriented individuals who are running for office in Hamburg for a seat in the city government.

The attempt by the government to prosecute nuclear energy opponents is the main problem that we are now facing. Two of those arrested in Grohnde have been sentenced to 12 and 13 months of jail without probation. Four others face similar trials. Teachers in many cities have been forbidden to wear no-nuke buttons and risk losing their jobs if they do so. This is another example of the *Berufsverbot* (see the last issue of *SftP*, p. 10). Press campaigns to prosecute members of the movement have become a part of daily life.

But who are the real terrorists? Those trying to stop the building of nuclear energy plants? Or those who are trying to build them? Our strength is our creativity, our hopes for a better quality of life, our determination and our solidarity!

Our Solidarity Is with our Brothers and Sisters at Seabrook and Everywhere!

No Nuclear Energy Plants Anywhere!

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The Dollars and of Nuclear

Introduction

The large corporations of the nuclear power industry have made their choice. They have invested a great deal of money in nuclear power in the hope of high profits, and they are using their vast economic power in an attempt to ensure that these hopes are realized.* In the late 1960s it looked as if these corporations would be successful, but they have suffered a series of setbacks which now threaten to stop nuclear's advance altogether.

The problems confronting the nuclear plan are substantial. Utilities have encountered financial difficulties which inhibit their ability to build nuclear plants. The simple costs of nuclear power have risen dramatically

*The nuclear industry is concentrated in a few corporate hands: two companies, Westinghouse and General Electric, have received two-thirds of all orders for nuclear power plants. Three firms divide 75% of nuclear construction. Plans for future nuclear power plants call for about a \$100 billion investment.

Joe Bowring, Nancy Folbre, Don Michak, and Tom Harris are members of the Energy Research Group, based in Amherst, Massachusetts. This article is taken from a section on economics and nuclear power which they wrote for the forthcoming book, No Nukes: Everyone's Guide to Nuclear Power, by Anna Giorgy and friends, to be published by South End Press, Box 68, Astor Station, Boston, MA 02123.

despite large federal subsidies, and the economic uncertainties facing its implementation have grown.

The nuclear corporations have not given up yet. Their proposed solution is in the best tradition of big U.S. corporations faced with disaster: use the federal government to cut their risks. They want continued federal subsidies, continued federal responsibility for critical parts of the fuel cycle, and new federal action to guarantee future profits. Taxpayers will pick up the bill, and everyone will bear the risks.

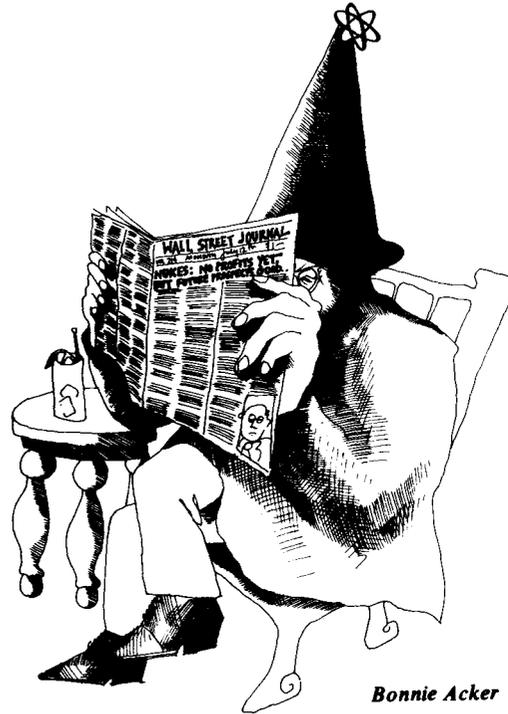
Nuclear manufacturers push nuclear power for the simple reason that it is good for profits. For the utilities the case is not as clear. Utilities have not been buying nuclear reactors. However, many of them continue to lobby for nuclear power even while cutting back on their orders for plants.

Capital Intensive Growth

The sixties were a boom for the economy in general and for the electrical utility industry in particular. Demand for electricity was expanding at a steady rate of about 7% a year, and investors were eager to supply the capital for new nuclear plants.

Cents Power

by Joe Bowring, Nancy Folbre,
Don Michak, and Tom Harris



Growth created expectations of continued growth which were essential to investors in stock, and the growth in earnings and profits maintained the good financial position of utilities in general. These conditions created a bias toward capital intensive growth by these regulated utilities.

As regulated monopolies, utilities are allowed a rate of profit which is set by the regulatory commissions. It is not a rate of profit on all their costs, however. It is a rate of profit on their capital or "rate base." This rate base consists principally of plant and equipment like the buildings, boilers, and reactors which are required for generating power. The regulatory commission approves a rate structure which will allow the company to pay for such expenses as maintenance and fuel, and to earn the allowed rate of profit on its capital.

This arrangement creates a bias towards capital intensity in the following way. When a particular item is included in a utility's rate base, the utility can recover that amount *plus* its rate of profit on it. If the item is not included in the rate base, the utility can recover only the amount spent. As a result, when a utility has a choice it will attempt to include as many of its costs as possible in the rate base so as to maximize its total profit.

It is this desire to maximize the size of the rate base — and thereby to maximize profits — which affects a utility's choice between a coal plant and a nuclear plant. There is a clear difference between the cost structure of

a coal-fired plant and a nuclear powered one. For coal plants, fuel accounts for a much higher percentage of cost, while for nukes, a much higher percentage is capital cost. Fuel costs are not included in the rate base while capital costs *are*.

Nuclear power was on the rise. Between 1965 and 1977 the generating capacity of nuclear plants, which reflects plants ordered in the late sixties and before, grew from 926 Mw to 47,000 Mw, or from an insignificant proportion of the nation's net generating capacity to about 9%. Cheap capital and high demand for electricity combined to make nuclear power an attractive option for profit-maximizing utilities and their stockholders.

The 1970s

This nuclear euphoria didn't last long. The fortunes of the utilities worsened dramatically in the early 1970s along with the rest of the economy. The underlying problems of inflation and recession meant financial strain for the utilities. The weakened utilities could not continue to invest at the levels to which they were accustomed. A major part of the problem confronting utilities was simply rising costs. The effect was to reverse the long-term decline in the cost of producing a unit of electricity and to end the stable or declining prices that electricity users enjoyed during the 1960s. These rising prices combined with the general recession to produce a dramatic decline in the demand for electricity.

As a result, it became very expensive to raise new capital. Just when many utilities had committed themselves to large construction projects, they were no longer able to afford them. In many cases they also no longer needed the added capacity. Where capacity was still needed, fossil fuel plants were easier for utilities to finance when capital was expensive precisely because they were less capital intensive. In order to meet the capital requirements of a nuclear plant, rate increases were required, while for fossil plants a substantial portion of the cost could be passed on to the customer via the already-established fuel adjustment clause.

The response from utilities was a drastic scaling down of all construction projects. Nuclear was especially hard hit. In 1974 about 170,000 Mw out of a planned 360,000 Mw of new plants were cancelled or delayed. Nuclear plants accounted for almost two-thirds of the cancellations. Orders for nuclear plants fell from a peak of 35 in 1973 to 3 in 1976 and 4 in 1977. *Electrical World* was forced to admit in 1977 that "almost all future nuclear additions have been rescheduled." The magic cycle of growth and cheap capital had been broken, and at least some of the pro-nuclear bias went with it.

Cost: Construction and Reliability

Estimates of the cost per kilowatt for every method of electricity generation have risen substantially in the last two years. The most important elements in the overall cost increases for nuclear power are the rising cost of construction and operation, and low *capacity factors*.

The actual construction of a plant, including the cost of financing construction is termed the capital cost. It has always been recognized that nukes have higher capital costs than coal plants, but in general, estimates of nuclear plant cost have proved too low by a factor of between two and three.

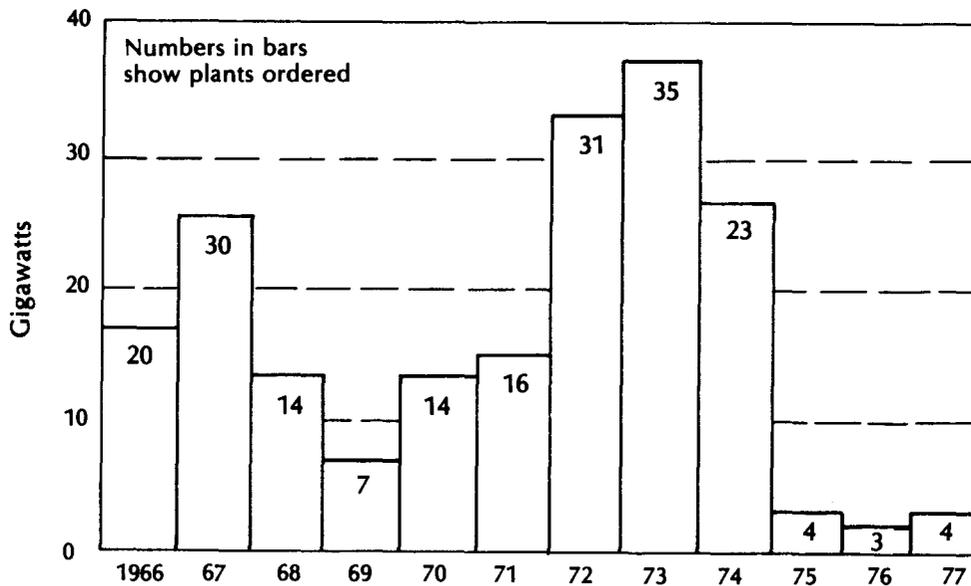
Typically, Northeast Utilities' Millstone Point Two plant, originally budgeted at \$186 million, had cost \$418 million when finally completed.

The high capital cost of nuclear power plants is proving to be a substantial barrier to their construction. Capital costs, unlike fuel costs, must be paid for whether or not a plant is operating at its design capacity. If a plant is generating below its design capacity or is shut down for any reason, then the capital cost per kilowatt actually generated rises correspondingly.

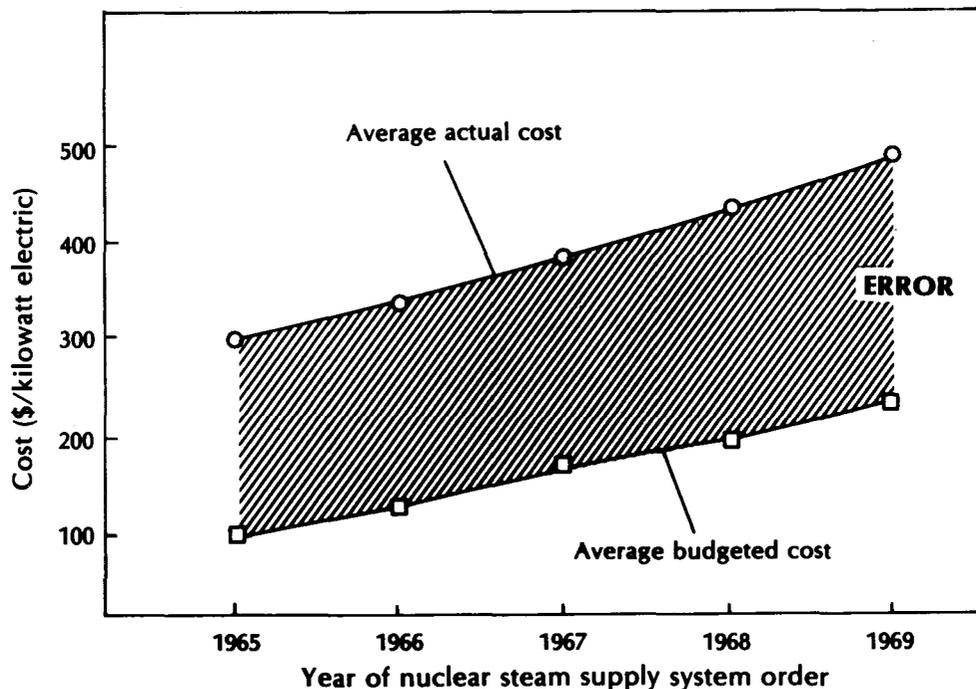
Early in 1974 economist David Comey found a serious bias in Atomic Energy Commission estimates of the relative costs of coal and nuclear. A.E.C. estimates assumed that both nuclear and coal plants operated at 80% of their design capacity. Yet Comey showed that nuclear power plants had not been able to generate much more than half the electricity they were designed to produce. When the A.E.C. projections were adjusted to conform to these actual capacity factors, nuclear-generated power proved to be far more expensive than had been expected.

The low reliability of nuclear generators significantly increases the cost of their operation. Reactor malfunctions are not small problems. Because of radioactive hazards, the cost of repairs or service to nuclear plants can be enormous. Work that would be trivial in

New nuclear power reactor orders are down sharply



Source: Energy Research and Development Administration



Gross misestimation of reactor costs has troubled the nuclear industry. The bottom line represents estimated costs of a reactor ordered in a given year, and the top line the actual costs ordered or expected (1973 dollars).

(Source: Bopp, et al., *Technology Review*, February 1975)

other circumstances can take a great deal of time. Quite often, when utilities are forced to shut down their nuclear plants they must buy electricity from other utilities at premium rates. These costs of poor reliability, which are unique to nuclear plants, are highly variable and difficult to predict.

The major variable cost of nuclear reactor operation is that of fuel. Principally, because of the exceptionally high heat content of uranium, the direct cost of fuel is now responsible for only about 13% of the cost of nuclear power. The price of coal accounts for about 37% of the cost of coal-fired electricity. For this reason, fuel price escalation has less impact on the cost of nuclear electricity. However, the cost of uranium has been and continues to be subject to unexpected price rises.

Nuclear fuel cost will be more significant in the future. In the late 1960s most expectations were that uranium prices would remain near \$4 per pound. Those days are long gone, in large part because of price-fixing by the uranium cartel. Bids for 1980 uranium ore are already near \$52 per pound. Moreover, experience has shown that nuclear fuel produces much less electricity per pound than was originally projected.

Federal Subsidies

Estimates of the simple costs of nuclear power don't tell the whole story. Taxpayers have made enormous contributions to the nuclear power industry through a number of direct and indirect subsidies. Many of these subsidies, such as the government guarantees which diminish investment risk, cannot be measured. Others can be roughly quantified through an analysis of government budgets.

Taxpayers provided the funds for the extensive research and development required to apply nuclear technology to electricity generation. The Investor Responsibility Research Center has estimated that, by January 1975, about \$5 billion had been provided by the federal government for the development of civilian nuclear power.

One way to get a perspective on the size of current subsidies of civilian nuclear power is to compare them to other areas of government spending. Such budget comparisons reveal seriously misplaced priorities. The most troublesome aspect of the use of coal for fuel lies in



Bonnie Acker

the deplorable working conditions of United States coal miners. However, the entire budget of the Mining Enforcement and Safety Administration of the Department of the Interior, the federal agency responsible for mining safety, is set at only \$106 million for 1978, about one tenth of the subsidy for uranium enrichment alone. The entire Occupational Safety and Health Administration was granted only \$130 million in 1977, less than one-half the money spent on nuclear fuel cycle research and development.

The nuclear industry would never have gotten off the ground without the passage of the Price-Anderson Act. This piece of legislation simultaneously limited the industry's liability for nuclear accidents and arranged for the federal government (again, the taxpayers) to share the costs. The Price-Anderson Act limits utility liability to \$560 million, of which \$100 million is insured by the federal government. This amount, \$560 million, is less than 11% of the potential damage from a major nuclear accident. The NRC has recently conceded that a major nuclear accident could cause \$40.5 billion in total damages. Former Pennsylvania insurance commissioner Herbert Denenberg has calculated that if insurance companies were willing to cover the risk, the premium required to insure a nuclear plant against such levels of damage would be about \$23.5 million a year (a figure approximately equivalent to the entire current costs of plant operation and maintenance). If this subsidy were eliminated, the price of nuclear-generated electricity could rise as much as 3.8 mills per kwh. The

Price-Anderson Act has been found unconstitutional in U.S. District Court. In the suit still on appeal, Duke Power Company has argued that, "without protection of the liability limit, investors would be unwilling to risk money in a power company, because of the possibility that claims from a nuclear accident could bankrupt them."*

The typical delivered residential rate for nuclear generated electricity was 4c per kwh in 1976. A conservative appraisal of the true cost, including the subsidies estimated above, is about 5c per kwh.

Actual rate	4.0c
Enrichment	.1c
Research and development	.7c
Insurance	.4c
	<hr/>
	per kwh 5.2c

Expressed in pennies, it may not sound like much. Read it, instead, as a 25% increase in the monthly electric bill for customers of nuclear-powered electric utilities. Such an increase in price actually charged would have made and still could make alternative energy strategies look considerably more attractive. By providing subsidies to the nuclear fuel cycle, the U.S. government is in fact choosing nuclear power over alternative methods of meeting our energy needs.

*The Supreme Court has upheld the constitutionality of the Price-Anderson Act in a recent decision.

Fuel Supplies and Reprocessing

Coal exists in the U.S. in amounts sufficient to meet projected demands for several hundred years: the adequacy of domestic uranium supplies, on the other hand, is questionable. The probable reserves will be used up by plants now operating or now in the planning stages.

Little of the potential heat value of a reactor's fuel supply is actually consumed before the fuel becomes so contaminated with reaction products that fission becomes inefficient and the fuel rod must be removed. From the beginning of the atomic era proponents of nuclear power have predicted that fuel supplies could be made to last almost indefinitely by extracting, or reprocessing, the unconsumed uranium in used fuel. There now seems little chance that such hopes will be realized.

The history of the fuel reprocessing industry is replete with financial disasters. In West Valley, New York, a subsidiary of the Getty Oil Company, Nuclear Fuel Services, convinced the state of New York to join it in a commercial reprocessing venture. (Considerable pressure for the plant came from the avidly pro-nuclear Governor Nelson Rockefeller.) The plant proved both dangerous and unprofitable; it was shut down after a few years. The only problem was that a lot of radioactive waste was left over, and proper disposal of it could cost up to \$660 million. Luckily for the company, their contract allowed them to leave the task and expense of cleaning up to New York State.

Waste Storage

Technical and political problems in the storage of radioactive wastes persist. Many scientists believe that no genuinely safe method of storage is feasible. Serious leaks have already occurred in storage areas at Hanford, Washington, West Valley, New York, and Maxey Flats,

Kentucky. Even temporary storage areas are in short supply. The nuclear power industry has openly acknowledged that it will run out of temporary spent fuel storage capacity by 1985.

Decommissioning

A nuclear power plant which has outlived its usefulness is the largest radioactive waste of all. Most industry estimates of the cost of completely dismantling nuclear plants fall between 10% and 15% of the cost of construction (in constant dollars). The lack of experience with decommissioning casts some doubts on the accuracy of these estimates. In at least one case, the cost of decommissioning actually equalled the cost of construction. No private utilities have set aside the capital required to decommission any plants. As Tom Wicker has pointed out, "In effect, future taxpayers will have to pay for current industry profits and relatively low consumer rates."

In addition, utilities can't be certain when they begin construction that 10 to 12 years later they'll end up with a functioning power plant. Plants have been stopped and shut down for design faults, siting errors, and inadequate waste disposal plans. As safer technology is adopted, plants already in operation frequently have to be shut down so that the latest design can be built in (retrofitting).

Much of the difficulty in determining the costs of nuclear power has political roots. Many of these costs depend on a regulatory process which continues to be subject to political pressure.

Opponents of nuclear power won a legal victory in 1971 (Calvert Cliffs decision) when they made filing of a detailed environmental impact statement a requirement for new construction. Pressure brought on the AEC led to new regulations in 1971 which restricted radiation emissions to a level "as low as practicable." Citizen resistance has forced rejection of a variety of faulty

NO NUKES!

everyone's guide to nuclear power



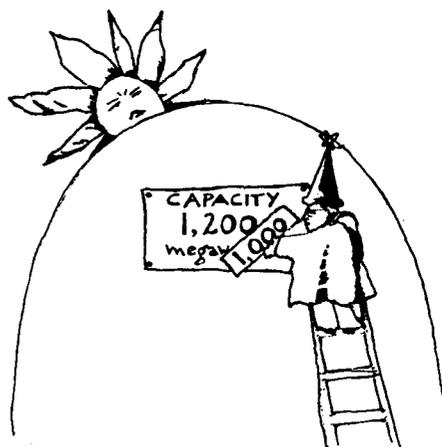
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Bonnie Acker

waste disposal plants. And, the state of California, in another example, has passed a law prohibiting the construction of new plants until an adequate waste storage plan is provided.

Summary

The simple costs of nuclear power have been rising dramatically. High costs of construction combined with low capacity factors and poor reliability have wiped out the cost advantage that nuclear once enjoyed.

The true cost of nuclear is substantially higher than the simple cost. The cost competitiveness depends on federal subsidies that ultimately come out of the pockets of taxpayers. If these subsidies were removed, the cost of nuclear would increase by 25%.

Utilities' difficulties in raising capital combined with rising costs have made it increasingly hard for utilities to build capital intensive nuclear power plants. In addition, political pressures on regulatory commissions have prevented the utilities from getting the huge rate increases that would be needed if they are to build more nukes.

These cost and financing problems have slowed the purchase of nuclear plants. Growing uncertainty about how high future costs will go has brought new construction to a virtual standstill. This uncertainty includes the cost of waste disposal as well as the final design and cost of the plants themselves.

Much of the uncertainty derives from political opposition which has already forced the industry to pay some costs which it wants the public to bear. The nuclear industry can't be sure that it won't have to pay even more of the cost in the future. The public's opposition to paying both simple costs and subsidies and to bearing the uncalculated health and safety risks of nuclear power could eventually force the nuclear industry to pay all the real costs of nuclear development. This would destroy nuclear's current artificial cost competitiveness and mean an end to its economic viability.

The final outcome is far from clear, but what is certain is that it won't be settled by simple economic forces alone. The costs of nuclear development are high. The revival of profitable nuclear power depends on shifting these costs and risks to the public. In the end, growing public resistance to bearing these costs and risks could stop nuclear's advance. □

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SN7

Twilight of Nukes in the Land of the Rising Sun

The number of conventional nuclear power plants in Japan reached 14 in 1977. An experimental fast breeder reactor also started test operation and a nuclear fuel reprocessing plant was put into operation in the same year. At the same time nearly half of the conventional light water reactors were out of operation because of accidents and mechanical troubles, so that only 30-40% of the total atomic generation capacity was used during the year.

The goal for Japan's long-range nuclear power development has been reduced several times. Tripling atomic power generation capacity by 1985 is considered realistic today, but there is no guarantee that this can be achieved. When the Fukuda cabinet formed in 1976, it emphasized as main points of its policy the opening of the Narita airport (see story elsewhere in this issue), the construction of the fuel reprocessing plant, and the development of other major power resources.

The Japanese were victimized by the atomic bomb and have suffered serious air and water pollution because of their country's rapid economic growth since World War II. These facts have added convincing power to the statements of the Japanese anti-nuclear movement. Japan relies heavily on foreign oil and coal, however, and faces strong pressure to develop a nuclear economy. The Japanese anti-nuclear movement shows a widespread desire "to re-examine the structure of the energy-consuming civilization and to seek to find a way of life worthy of human beings, a way of life that does not depend on atomic power" (from the appeal of the Working Committee for "Anti-Nuclear Power Week 77").

There have been many protests. Japan's first nuclear ship, the Mutsu, developed a radiation leak in 1974, and the offer of one port to undertake repairs has provoked continuous and widely-publicized protests on the part of shipyard workers and fisheries' groups.

The new nuclear fuel reprocessing plant is the subject of a lawsuit which charges that local inhabitants are exposed to radioactive discharges from the plant in one day equal to that released from a conventional nuclear power plant in one year. The result of the suit against the plant, built with United States technology, has not been decided.

In the community of Tanashio, where a power plant is planned, members of an association formed to oppose it pledge not to sell land to the company or any developer, or to take part in talks with any government group. Construction has been held up for almost ten years. Strong resistance on the part of local fishermen and residents of Onagawa has blocked the construction of a nuclear plant even though it was approved in 1970 by the government. The fishermen fear that their livelihood will be taken away by construction of the plant and have resisted the offer of large sums of money by the power company to buy their fishing rights.

Moves disguised as impartial "academic studies", promoting the construction of power plants, have also been opposed. One such symposium was moved from Kashiwazaki, to Tokyo, and finally dropped, due to public pressure. The Government is accused of concealing the truth about worker exposure to radioactivity, and the matter has been debated by legislators in the Japanese Diet. There are frequent reports in the press of worker exposure to unsafe levels of radioactivity at atomic power plants. This struggle for safety continues despite the favorable attitude of the Electric Power Industry Workers Union toward atomic power. The goal of a non-nuclear Japan is far from being achieved.

—Editorial Committee

Sources: A report by Nobuo Matsuoka, of Jishu Koza, a Japanese anti-nuke group; also *Nuclear Power: The Fifth Horseman*, by Denis Hayes, Worldwatch Institute.

WHO'S AT THE CONTROLS?

Sanrizuka Farmers vs. The New Tokyo International Airport

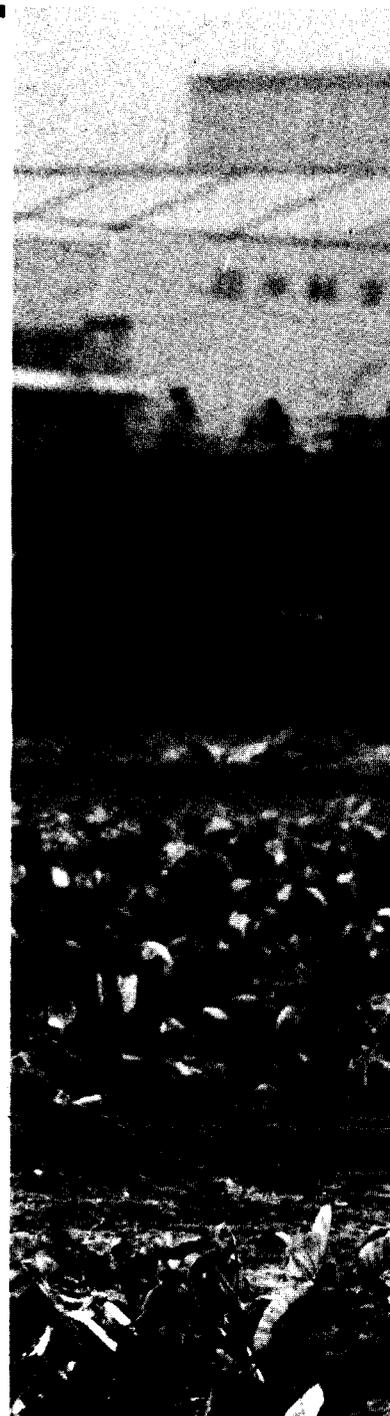
by the editors of AMPO

This article is abridged from the special issue on Sanrizuka of AMPO Japan-Asia Quarterly Review, Vol. 9 No. 4. A year's subscription to AMPO is US\$12.00 for individuals and \$20.00 for institutions, from AMPO, PO Box 5250, Tokyo International, Japan. AMPO is published in English.

All photos printed here are by Fukushima Kikujiro, a militant free-lance photographer who has been with the peasants' struggle from the very beginning. He has also covered numerous people's struggles including those on atomic weapons, military affairs and the student movement.

Introduction

For twelve years the farmers of Sanrizuka have fought government demands to sacrifice their fields for a New Tokyo International Airport. Their determined resistance has evolved into a struggle of universal significance, challenging the mindless ethos of Japan's frantic postwar industrialization. It has inspired





people's movements all over Japan and brought together the finest elements of radical labor, the Buraku (Japanese outcast) Liberation Movement, community struggles to resist industrial development and oppose pollution, consumer protection movements and farmers' struggles to protect agriculture.

In 1966 the Japanese government abruptly and arbitrarily decided that the Sanrizuka farmers' land, 66

kilometers from Tokyo, should be confiscated to build a New Tokyo International Airport. The farmers were never consulted; they read the decision in the newspaper. The majority were enraged with this arbitrary decision and rose to protect the farms they had made fertile through painful years of labor.

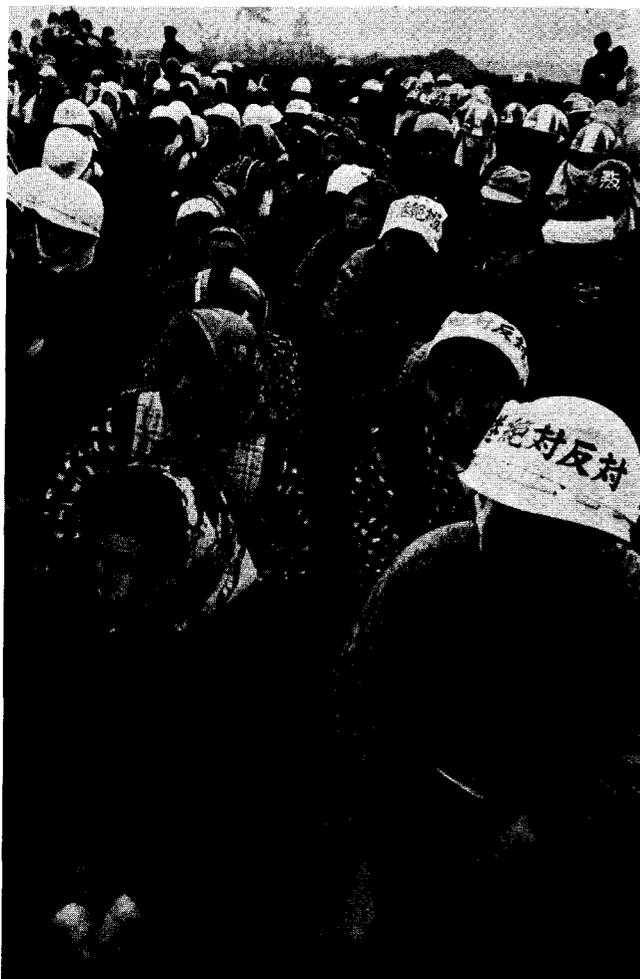
But the government and its Airport Corporation responded violently with riot police and bundles of banknotes. In this confrontation the farmers had to risk their lives on the one hand and resist being bought off on the other. Supporting the farmers were radical students and workers whose own liberation struggles were in the midst of an upsurge, stimulated by the heroic struggle of the Vietnamese people against U.S. aggression.

Those who refused to sell their land, determined to remain farmers, were proud people. They despised the arrogance of Airport Corporation officials who callously treated farmers as though they lacked integrity, ready to bow and scrape to whomever offered them the biggest handout. But pride in themselves and their heritage runs deep, and the farmers quickly advanced from an early defensive posture of protecting their "private" farms to an entirely new and radical outlook. They developed penetrating insight into the anti-farmer, anti-people nature of state power.

The government claimed that the farmers should surrender their "private property" for the "public good," that is, for the airport. But how is the public better served by the airport than by the farmers? What is "public" about an airport (or petrochemical complexes, steel mills and other giant industrial structures for that matter) catering to the interests of big corporations and built at the sacrifice of peaceful primary producers who feed the many? The farmers of Sanrizuka have radically challenged this perverse rationale of "development." They have exposed this government, which tries to enforce such development with police violence, for what it is: the mouthpiece and protector of private interests.

The decline in the agricultural population and in farming families reflects the supremacy of urban corporate industry which, solidly backed by government strategy, has deliberately demolished rural communities to create cheap labor for their factories and construction of the infrastructure supporting industrialization. For example, the Agricultural Standard Law, instituted in 1961, was a legal device to accelerate this process of destroying agriculture. It imposed "structural reforms" on agriculture which in effect meant that only a thin layer of rich farmers would survive the impact of easing restrictions on agricultural imports.

Most farmers were forced to make a massive exodus to the cities to work there for half the year as construction workers or as seasonal workers in auto plants, steel mills, or in other odd jobs. The resulting margin of



decrease in farm land, amounting to 1.1 million hectares (2.72 million acres), became factory sites, golf courses, leisure centers and other sites of urban luxury for the privileged. Confiscating land in Sanrizuka for the new airport is essentially part of this agriculture-scraping strategy.

The new airport was specifically conceived as part of the government's industrialization plan to turn the entire Hokusai Plateau, one of the richest farming areas in Japan, into an "industrial area" linked with the coastal petrochemical complex built at the sacrifice of local fishing.

Pure business speculation is yet another motive behind construction of the new airport. The airport neighborhood is being turned into a large commercial area with hotels, bars and other speculative enterprises mushrooming everywhere. Fortunately, the investors have yet to reap any profits. As Maeda Toshihiko, a peasant thinker, said, "The government should not have claimed the airport was for the public good; it should have frankly admitted that it was only to create new opportunities for profiteering."

What has been the result of the strategy of industrial supremacy of which the New Tokyo International

Airport is a part? From 1960 to 1975 Japan's food self-sufficiency rate dropped from 90 per cent to 74 per cent, and its grain self-sufficiency rate dropped from 83 per cent to 43 per cent. Japan has become completely dependent upon foreign food sources, U.S. agribusiness in particular, for vital food supplies.

Destruction of agriculture is not unique to Japan. The same strategy has even more barbarous and cruel expressions in many Third World countries where peasants and fishermen are being violently driven from their land for the sake of "industrial development" promoted by foreign capital. Although the Japanese situation is different, the Sanrizuka farmers are fighting the same fight as their counterparts in the Third World.

As the farmers' struggle advances, it becomes more and more consciously oriented toward creating an alternative course of development for Japanese society. Rejection of chemical fertilizer, collective ownership and building direct distribution links with urban consumers who support their struggle, represents a small but important revolution in agriculture.

Now the Sanrizuka struggle has entered a crucial stage. The Fukuda Cabinet, immediately after it was formed in January, 1977, declared that opening the Sanrizuka airport was a top priority political task. The government has since mustered all its strength to crush the farmers' resistance. In May, 1977, the Cabinet, Airport Corporation, Chiba District Court, and police secretly conspired to attack the two iron towers the farmers had erected to thwart the takeoff of planes. In the ensuing clash Higashiyama Kaoru, a young, dedicated member of the support movement was killed, and the government declared that the new airport would be opened on March 30, 1978.*

State Power vs. The People

The soil in Sanrizuka is fertile. Watermelon, taro, peanuts and a host of other vegetables produced here are enjoyed throughout the country and known for their exceptional quality and taste. Until recently Sanrizuka was a peaceful village where the people lived in close harmony with the land, where farmers worked diligently and life had meaning.

The history of Sanrizuka is by no means old. Most of this area used to be an imperial pasture. Many of Sanrizuka's farmers settled here only after the Second World War, although there are others who have been tilling land inherited for generations. The settlers say that when they first came the whole area was covered with bamboo bushes and tree stumps. They dug out the roots and stumps piece by piece and leveled the land. After more than twenty years of backbreaking work, they finally reclaimed the fertile soil they have today. This is the history that has inspired the Sanrizuka farmers today to live by the slogan, "The land is the same as our lives!"

By the beginning of the 1960s Japan's economy was moving into high gear. Crucial factors in this growth were Japan's active support of the U.S. in the Vietnam War and the beginning of Japanese overseas investment, especially in Southeast Asia. With these developments the demand for air transportation grew, and Japanese industrialists began to feel a pressing need for a new international airport to replace the existing Haneda Airport, which they said was too congested. So in 1962 the government decided to build a New Tokyo International Airport. Several sites were proposed for the new airport. In the face of fierce local opposition, and for other reasons as well, the government's choice changed swiftly from one locality to another.

Suddenly in June, 1966 the Sato Administration announced that the new airport would be built in Sanrizuka. The following month the Cabinet, completely ignoring local residents, officially sanctioned this plan. With this decision the New Tokyo International Airport Corporation was established and set April, 1971, as the date for opening the new airport. To the farmers in Sanrizuka the government's unilateral action came as a complete surprise.

On June 28, 1966, immediately following the government's announcement, 3,000 local residents of Sanrizuka and their supporters held a rally denouncing the decision. They formed the Sanrizuka Airport Opposition League, encompassing 560 households and about 1,500 members. Tomura Issaku, a dedicated Christian activist then 55 years of age, was chosen as chairman of the Opposition League.

At its founding rally, the Opposition League adopted the following declaration:

To forcibly deprive us farmers of our land permeated with our sweat and blood,

To destroy our agriculture,

Further, by means of noise and other pollution to force the whole agrarian population of the Hokuso District into a situation where they cannot make a living by agriculture,

And the livelihood and education of residents in the vast neighboring area is disrupted:

This is a blatant policy of disregard for our human rights which we can never accept!

We participants in today's rally declare that we will resolutely fight the Sato Government and the prefectural authority until they abandon their plan to build the Sanrizuka Airport.

With this declaration the Sanrizuka farmers began one of the most heroic struggles in the modern history of popular movements in Japan, a struggle now in its twelfth year.

Caught unprepared by the farmers' stubborn resistance, the government and the Airport Corporation





sought to undermine their spirit and destroy their resolve. Those who refused to sell their land "for the sake of the nation" the government tried to pressure with ever-larger sums of money. As a result, some farmers, though not in favor of the new airport, reluctantly agreed to sell their land. The tragic consequence was that the once peaceful village of Sanrizuka was split into two camps, those unconditionally opposed to the new airport versus those who agreed to sell their land.

Ironically, those farmers who thought they gained by selling their land for what seemed like huge sums of money in fact saw their lives fall apart. With their newly acquired wealth, many of these former farmers lost interest in working. They lived quite comfortably for a time on the money from their land, only to wake one morning and find themselves penniless. In contrast, the farmers of the Opposition League formed a close-knit community of mutual support.

Exasperated by its failure to persuade the opposition farmers to sell their land, on October 10, 1967, the government and the Airport Corporation called out 2,000 riot police to forcibly carry out land surveying in Sanrizuka. All members of the Opposition League, organized into groups such as the Old People's Brigade,

the Women's Brigade, the Youth Brigade and the Children's Brigade, joined to prevent the survey using solidarity shacks which they had built at various spots within the proposed airport site. Thus the people clashed head-on with state power. By the end of the day the Airport Corporation had succeeded in driving piles along the periphery of the airport site at only three of the eleven sites planned for the day.

Out of this initial clash, Sanrizuka became a focus for people's struggles all over the nation. At this time workers and students, inspired by the heroic struggle of the Vietnamese people, discovered in the Sanrizuka struggle a focal point of the most fundamental conflicts in modern Japanese society, and they came to take part. Some of these committed students and workers built their own solidarity shacks in Sanrizuka and stayed there on a permanent basis, helping the farmers with their crops, learning from them and fighting at their side. From this there emerged a genuine community of struggle and solidarity among the farmers, workers and students.

The strength of this coalition grew until in February and March of 1968 the Opposition League, the National Anti-War Youth Workers' Committee and the Student Movement were able to unite 10,000 demonstrators in a series of rallies. Following the rallies the demonstrators marched to the Narita office of the Airport Corporation, forcing their way past armed riot police. In the process hundreds were injured and about 500 were arrested. Through this kind of courageous struggle the Opposition League frustrated the Airport Corporation's plan to open the airport by April, 1971.

The Fight for the Land

Three times in 1970, in February, May, and September the Opposition League blocked the authorities' attempts to force their way into the land for surveying purposes. Faced with the farmers' determined resistance, in December of 1970 the government resorted to the ultimate weapon at its disposal, the Special Land Expropriation Law which legalized confiscation of the farmers' land.

The land to be expropriated was located in the northern part of the Phase 1 construction site where a 4,000 meter runway was to be constructed. A large number of students and workers rallied to support the farmers' struggle against confiscation and built a tent village. The farmers dug underground tunnels, built seven wooden towers including one more than a dozen meters high named the Farmers Broadcasting Tower. The Broadcasting Tower served two purposes: surveillance over the enemy's moves and broadcasting encouragement and warning to the farmers. Flying from the top of this tower was a flag with a rising sun stained black around its rim. Also hanging from the top was a

large banner with the words, "We Oppose Land Confiscation in the Name of the Japanese Peasantry."

Expropriation of the farmers' land began on February 22. The Airport Corporation utilized a total of 18,000 man-days of riot police and more than 200 pieces of land-leveling machinery. Before the operation was undertaken, the Airport Corporation said boastfully, "The job will be completed in four hours." The farmers, however, sustained a bitter struggle for 14 days, directly confronting the blatant violence of the state.

On February 22 and 23, the first two days of the encounter, the farmers and their supporters fought off riot police with showers of stones. On February 24 the Children's Brigade clashed with the Airport Corporation's guards. Early the next morning 3,000 riot police charged students and workers, who fought back using bamboo spears against riot shields. The riot police then used bulldozers to lead another assault on the farmers' supporters. As the bulldozers approached, 150 members of the Opposition League threw themselves in front of the heavy vehicles shouting, "If you want to move ahead, it will be over our bodies!" That day 141 men and women were arrested.

Members of the Women's Brigade bound themselves with thick iron chains to barricades and trees inside their forts, glaring at riot police outside. Members of the Old People's Brigade fought by crawling into underground tunnels, braving the danger of a cave-in from the weight of bulldozers roaring around above them. Members of the Children's Brigade boycotted school to join the line of battle.

As the struggle continued into March, many farmers lashed themselves high up in trees to resist the land confiscation. But almost without pausing for breath the Airport Corporation felled the trees one after another, totally disregarding the farmers in them.

For the huge "Solitary Pine of Komaino" it was no different. A thickly bearded farmer and his neighbour resisted from inside a shack built in the tree, using yam hoes as spears. While bulldozers roared around its base, a crane looped a cable around the tree. At the same time water cannons deluged the farmers' shack, shaking it violently.

From their position the farmers shouted down, "Will you execute us simply because we want to continue farming our land? We have climbed this tree prepared for death, and we will fight to our last breath!"

A chain saw roared, and as the cable tightened the huge pine trembled. The next moment the base of the tree soared high into the air, and the top came crashing to the ground. The two farmers were badly injured, but the police took them away without treatment.

It was 2 o'clock in the afternoon of March 6. With the felling of "the Solitary Pine of Komaino" the Airport Corporation declared that the first land expropriation had been completed. Throughout the preceding



13-day battle as many as 1,000 farmers and their supporters were injured and 401 were arrested.

The farmers' spirit, however, was not broken. They crawled inside their underground tunnels and kept on fighting. Farmers in the Broadcasting Tower that was brought down in July of that year continued broadcasting as it toppled: "Even if this tower is pulled down, the spirit of us farmers will not die. We will build a second and a third farmers' tower after this one!"

In September, 1971, the riot police started another offensive, the second compulsory land expropriation. Early on the morning of September 16, a band of guerrillas attacked a troop of riot police engaged in a search in the eastern part of Sanrizuka. Three policemen were killed.

The police retaliated with outright attacks on the three forts. In this confrontation 3,500 men and women of the Opposition League faced 5,500 riot police and 130 heavy vehicles like bulldozers, power shovels and cranes. The Komaino Fort put up fierce resistance. As the autumn sky was all but blotted out by torrents from a water cannon aimed at the fort, a power shovel, surrounded by riot police, roared ahead. From a tower in the fort the resisters attacked with a shower of Molotov

cocktails. The machine burst into flame, and the driver leapt from his seat and fled.

As the battle ebbed and flowed, the police tightened their encirclement. At three o'clock in the afternoon, using a crane and cables, they toppled the tower that rose 20 meters above Fort Komaino, bringing it to the ground in a sea of fire. Of the dozen farmers and students who fell with it, one student was critically injured, his lungs seared from inhaling flames and his body bruised and burned all over. The police took him to the compound of the Airport Corporation office and left him there without treatment. That day 476 men and women were arrested.

Four days later the riot police attacked the last plot of private land remaining in the Phase 1 construction site, the residence of 65 year old Ohki Yone. They came while she was working in her yard. Her tiny house of two tsubo (6.6 square meters) was smashed in a moment. When Ms. Ohki resisted, six burly policemen knocked her down and beat her. With her head bleeding they threw her on a huge riot shield and carried her off.

The government used the deaths of the three policemen to bring new pressure on the Opposition League. In a much publicized campaign claiming to be hunting for outlawed murderers, they arrested 130 members of the Opposition League and supportive groups, including most of the members of the Youth Brigade.

These government efforts to break the farmers' spirit only fired their opposition all the more, solidifying their determination to raise the Tall Iron Tower of Iwayama.

The Children of Sanrizuka

In August, 1967, a Children's Brigade was formed within the Opposition League. At first about forty elementary and junior-high school students, children of League members, joined, but the membership gradually



increased. During the fight against forced surveying of the farmers' land by the Airport Corporation in February, 1970, the children boycotted school and joined their parents in the opposition. On February 24, 1971, the day of the first attempt to expropriate farmers' land, children fought in the front lines against riot police and Airport Corporation guards. In that battle the guards clubbed and kicked them. About thirty people were pushed off a high embankment.

The news media criticized the Opposition League for "involving children in the fighting." The best refutation of this criticism is the statement by the Children's Brigade at the time of the first expropriation:

The Airport Corporation has brought guards and police with clubs and shields to steal our land. We don't want them to turn our Narita into a military airport.

Because school is important to us,

Because we want to study,

Because our lives are important to us,

Because our land is important to us,

we are fighting the guards who club us and drag us out of the tunnels. The tricks of the Airport Corporation will not defeat us. We will join our families and fight with them until victory is won.

The Children's Brigade set up their own study program, taught by university students who had come to Sanrizuka to join the struggle. But the best education for the children was watching their parents fighting for their lives, and joining them in that fight. As the coming generation, the children who were fighting at Sanrizuka were getting something that they could never get from an education that aims only at scoring high grades.

After the Towers Fell

The Opposition League, undaunted by the two expropriations and the repression that followed the deaths of the three policemen, began to build a new stronghold, the iron tower. In March, 1972, Iwayama Tower, 62 meters high, was completed. It stood in the path of planes using the 4000-meter runway finished in April of that year. Along with a smaller tower, 31 meters high, which had been finished in May, 1971, it prevented planes from taking off and landing. Soaring high into the air, the towers kept the airport from being opened as the battle entered its eleventh year.

In January, 1977, at his first Cabinet meeting of the year, Prime Minister Fukuda insisted that the airport would be opened "within the year," whatever the cost. Three prime ministers have come and gone since Sanrizuka was picked as the airport site. But those eleven years saw the Opposition League's fighting spirit become ever more firmly rooted. Sanrizuka had become a

symbol of opposition to the state. To use a Buddhist term, it was the "head temple" of the struggle for all Japanese people — a base not only for the farmers but also for victims of Minamata mercury-poisoning sickness*, the movements against pollution, nuclear power, and industrial development. The Fukuda Cabinet hoped to suppress all these opposition movements by using the full power of the state to demolish the towers and open the airport.



On April 17, 1977, supporters of the Opposition League held a rally at Sanrizuka with the slogan, "Defend the Towers — Abolish the Airport!" No fewer than 23,000 activists from opposition fronts throughout the country, the largest number to gather in the history of the Sanrizuka fight showed the authorities that a national movement to defend the towers was building.

Already more than 100,000 people had joined as legal owners of the towers, a movement promoted by the Opposition League to make the towers the property of all the nation's people.

The national authorities gave up trying to remove the towers by frontal attack and resorted to a more underhanded strategy. On May 6 at three o'clock in the morning, 1,500 riot police quietly surrounded the towers. They severed telephone lines to the outside, cutting off communication. At eleven o'clock, they attached cables

to the towers, burned through their bases with acetylene torches and quickly pulled them down. Thus the towers were demolished by surprise attack with complete disregard for the law.

The day after the towers were demolished, the government made a flight test of the runway with a YS-11 plane. On the ground, the Opposition League tried to stop the test by burning old tires to make a smoke screen.

Two days later 3,700 people, enraged by this foul play, gathered at Sanrizuka to hold a protest rally. Using stones, Molotov cocktails, and the poles of their banners they clashed with police. The police retaliated by firing tear gas cannisters at random.

Chairman Tomura expressed the Opposition League's determination to continue fighting in a speech: "The state itself has violated the law by demolishing the towers like a thief in the night. We cannot restrain ourselves any longer in the face of this illegal government action. We will fight to the end, using any means necessary to force them to give up the airport!"

Indeed, the opposition forces then began guerrilla warfare, setting fire to police boxes in Narita City and to Airport Corporation buildings. A fierce, bloody fight developed in which one policeman was killed.

Final plans for the new airport call for three runways and a total area of 1,065 hectares (2,631.6 acres). Only Runway A of the three runways has been completed, and the corporation has yet to confiscate the land for the remaining 2,500 meter and 3,200 meter runways planned for Phase II of the construction. It took the corporation two violent, protracted campaigns to secure 550 hectares (1,359 acres) for the present runway. (Even at that, three tracts of land owned by two families within the Phase I construction site remain to be confiscated.) It took until April, 1972, to complete the first runway, and the terminal buildings and other facilities took until April, 1974. Phase II of the construction, still on the drawing boards, will require an additional 515 hectares (1,272.5 acres) of farm land on which 21 families belonging to the Opposition League continue to hold out, cultivating their farms in defiance of the government.

For five years after Phase I of the construction was completed, the airport was left untouched, a "flightless airport." Cracks developed in its only runway, and the equipment in the airport buildings remained covered with dust. But the Fukuda Cabinet, having demolished the two iron towers in May, 1976, is frantically preparing for the opening of the airport. Because of the farmers' determined resistance, the government's original date for opening the airport (April, 1971) has been postponed six times. At the beginning of 1977 Fukuda declared the airport would be opened by the end of the year, but once more the farmers have forced the date to be pushed back, this time to the end of March, 1978.

Even if the government declares the airport legally open, one new problem after another will cripple it. For one thing, an airport is such a vulnerable system that the government has no way to protect its many vital parts from "guerrilla" attacks. In fact, since the towers fell, anonymous groups have attacked a number of vital facilities, burning some and completely destroying others.

Jet fuel is another headache. A plan to pipe in fuel was scrapped because of local opposition. An alternate three-year interim plan to use railroad tank cars is threatened by the Engineers' Union of the Japan National Railways. They have declared they will strike if the railroad is used to transport fuel. The militant Chiba chapter of the union, in particular, will oppose any order to transport fuel.

Many other problems remain unsolved, such as transportation between the airport and Tokyo, and jet noise.* If the airport is opened as planned at the end of March, 1978, there will be terrible traffic jams on routes connecting the airport to Tokyo, especially in Narita City. Passengers taking the four-hour flight from Hong-kong may face another four-hour trip from the airport to Tokyo once they arrive.

To make matters worse, the airport itself is defective. Because of their overriding political preoccupation, the Airport Corporation neglected to requisition sufficient land for Phase II of the construction. Although Runway A is officially 4,000 meters long, in fact, for arriving planes it is only 3,250 meters long. As a result jets must go into a steep climb after take-off and a corresponding dive when approaching. Japanese pilots have delivered a letter of warning that if the airport is opened as it is, they cannot guarantee the safety of their passengers.

With only one main runway complete, the airport cannot function normally. In an area where cross winds of 6-7 meters/second are common, an airport without an alternate runway is frequently forced to close down. As an airline expert pointed out, "An airport with only one runway is like a two-engine plane with one engine stopped."

Politics is behind the Fukuda Cabinet's relentless push ahead with this utterly defective airport. The government knows the airport cannot function properly even if it is opened. Nevertheless, its main goal is to crush the recalcitrant farmers and their supporters. In the government's eyes this would break the back of militant people's movements throughout Japan.

To this end a colossal sum of money, estimated at US \$4 billion has already been invested in the airport. The Airport Corporation alone has spent \$960 million including \$184 million wasted on interest payments. To complete the airport the government will spend another \$8 billion in a way reminiscent of the U.S. government's squandering its people's tax dollars on the Vietnam War. And like the Vietnam War, the more money the

Japanese government spends to escalate its anti-people operation, the more enemies it creates and the more obstacles it invites .

The Sanrizuka struggle is not coming to a close. On the contrary, it is gaining new life, regardless of whether or not the government succeeds in declaring the airport open.

Since the beginning of 1977 the anti-airport struggle has rapidly expanded in scope, enlisting the fresh support of anti-pollution, anti-nuclear power and anti-"regional development" movements all over the country, as well as the Buraku (Japanese outcast) Liberation Movement. In addition, increasing numbers of workers have joined the struggle, among them the militant Chiba chapter of the Japan National Railway Engineers' Union. Workshops, schools and local community groups are organizing a national support network for the Sanrizuka struggle.

For 22 days, beginning on September 18, 1977, people from all over the country marched 700 kilometers from Osaka through Tokyo to Sanrizuka to express their solidarity with the farmers' struggle. Wherever the marchers went, local people welcomed them warmly. The marchers called this a "Long March," spreading the seeds of the struggle all over Japan. When they arrived in Sanrizuka on October 9, more than 20,000 people from all parts of the country joined them for a militant demonstration.

Solidarity has been expressed not only in Japan but also in Southeast Asia and other parts of the world where people are fighting for their liberation. Thousands of people from both Japan and overseas, ready to fight alongside the farmers, have visited the Worker-Peasant Unity Hut at Sanrizuka, built in May of 1977 as a hostel, school and fighting post.□

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Update

On March 26, 1978, a bold offensive destroyed air-traffic-control equipment thwarting the twelfth attempt to open the airport in twelve years. On May 20, the day of the opening, underground cables were expertly cut disrupting air traffic all over Japan. This resistance was led by the Chakaku-ha (Core Faction), the extreme left-wing group that was a center of violent student opposition to the Vietnam War in the sixties. Narita is now in operation, serving planeloads of passengers who are mostly businessmen and tourists feeding into Japan's tumorous industrial, and possibly military, growth. The complete transformation of Japanese culture from one of agriculture to one of industry is destroying the "intricate interweaving of tradition and mechanization, craft and science."* It is clear however, that 13,000 riot police and \$13M worth of fences will not prevent farmers and supporters from fighting for what is theirs.

**In These Times*, June 21-27, 1978, p. 10.

resources

Please send your items and suggestions for this column to Tallahassee SftP, c/o Progressive Technology, P.O. Box 20049, Tallahassee, FL 32304.

"Science and Struggle" is the title of a special issue of *Black Books Bulletin* (Volume 5, #3, Fall 1977). It includes a feature article entitled "Towards a Black Science and Technology" by Carl Spight. Also included is an article about the Two Truths Theory (more aptly called Anokwalei Enyo — a theory from ancient African cosmology), and an interview with Dr. Fletcher Robinson who was one of the organizers of the Science and Technology Committee of the Sixth Pan African Congress. *Black Books Bulletin* is published quarterly and is available for \$8/year from the Institute for Positive Education; 7524 S. Cottage Grove; Chicago, Illinois 60619.

New Victoria Printers, Inc.; 7 Bank Street; Lebanon, New Hampshire 03766. This feminist work collective has produced two "Women in Mathematics" T-shirts that are really spiffy. One is of Sonya Kovalevsky and the other is of Emmy Noether — two women mathematical geniuses who have been overlooked by history. Sonya can be purchased for \$5.00 plus 60¢ postage and handling fee — available in small, medium and large, light blue or yellow shirt with purple image. Emmy is the same price, same sizes, same colors, but with a royal blue image.

"Dancing South to South: A New Partnership in Technology — of, by, and for the Third World" is the special issue title of the May 1978 *New Internationalist*. Several articles discuss the various aspects of technical cooperation among developing countries. The *New Internationalist* is published monthly in England (62a High Street; Wallingford; Oxon OX10 0EE) and is available to American readers via New Internationalist; 113 Atlantic Avenue; Brooklyn, New York 11201. It is subtitled "The People, The Ideas, The Action In The Fight For World Development". It is written in a popular format that is informative and useful. \$12/year.

Women Health Workers (a 30 minute slide show) traces the history of health care from a service provided by women to its development as a massive profit-making business. It focuses on the operation of class, race and sex in the hospital hierarchy. Some possibilities for change are also explored. It was produced by the Women's Health Collective (Philadelphia) and is available from Slide-Tape Collective; 36 Lee Street; Cambridge, Mass. 02139. 30 minutes, 180 color slides in carousels, cassette tape, script, rental \$40 to institutions, \$12 for unfunded women's/workers'/community groups.

Dialectical Anthropology is published quarterly (\$20/year) by Elsevier Scientific Publishing Company; P.O. Box 211; Amsterdam, The Netherlands. For U.S. readers it is Elsevier; 52 Vanderbilt Avenue; New York, New York 10017. "Marx left us an implicit and explicit vision of humanity, a refined and fruitful method of social analysis, a catalogue of social insights, a profound sense of history, the framework of an anthropology, and a revolutionary purpose. That is the spirit in which this journal is offered."

Bibliographie sur la Protection de L'Environnement, L'Ecologie et L'Ecologisme (Bibliography on Environment Protection, Ecology and Ecologism) Edited by Roland de Miller and published by Les Amis de la Terre (Friends of the Earth); 117 Avenue de Choisy; 75013 Paris France. January 1978, \$1.00. This bibliography gives pretty much of a full spectrum view of the resources of the French environmental movement. It has almost forty different subject headings, including reference works, political ecology, periodicals on environment, documentation centers, agriculture, citizen groups, and much more. It's annotated but you need to know French.

Children's books are an important resource. Three titles by Robert C. Hayden are worthy of note; *Seven Black American Scientists*, 176 pp. 1970, \$6.95; *Eight Black American Inventors*, 144 pp. 1972, \$6.95; *Nine Black American Doctors* (co-authored with Jacqueline L. Harris), 144 pp. 1976, \$6.95. All contain short easily readable (grades 5 and up) biographies and all of them are published by Addison-Wesley Publishing Company (Reading, Massachusetts 01867). Along these same lines is the title *Charles Richard Drew: Pioneer in Blood Research*, Richard Hardwick, 144 pp. 1967, Charles Scribner's Sons. \$5.95.

Genocide in Paraguay, Edited by Richard Arens, 171 pp. \$12.50, Temple University Press (Philadelphia, PA 19122). The purpose of this book is to demonstrate that not all "development" is good. This is a case study of the Aché Indians — they are a hunting people who, until recently, lived in the safety of the forests of eastern Paraguay. Over the past decade, however, highway, forestry and agricultural "development" projects have been planned to pass through their homeland. With this economic expansion, the Paraguayan government, a military dictatorship under the leadership of General Alfredo Stroessner since 1954, has introduced a deliberate policy of exterminating the tribe. *Genocide in Paraguay* is an attempt to bring world-wide attention to the plight of the Ache.

China Exchange Newsletter: Committee on Scholarly Communication with the People's Republic of China; National Academy of Sciences; 2101 Constitution Avenue; Washington, D.C. 20418. Monthly. Though published by establishment types — turns out it's a pretty informative newsletter for those interested in scientific developments/exchanges in the PRC and each issue has a useful bibliography. In fact if you don't sign up for this one you just aren't interested, it's free. □

SONGS FROM SEABROOK

MY FAVORITE THINGS

(Music: same name. Words: Arnie Alpert and Alden Meyer)

Orbiting solar with microwave towers,
Dangerous coal mines and nuclear power,
Excessive construction and the profits it brings —
These are a few of my favorite things.

Increasing the rate base with nuclear stations,
High unemployment and higher inflation,
Centralized power, like monarchs, like kings.
These are a few of my favorite things.

When the sun shines,
When the wind blows.
When demand won't grow,
I simply remember my favorite things —
And then I don't feel so low.

Putting a nuclear plant on the docket,
Rigging the hearings so no one can block it,
Rubber stamp agencies tied up with strings —
These are a few of my favorite things.

Repeatedly lying that solar's no answer,
Burying studies that link nukes to cancer,
Selling plutonium to terrorist rings —
These are a few of my favorite things.

POWER POWER

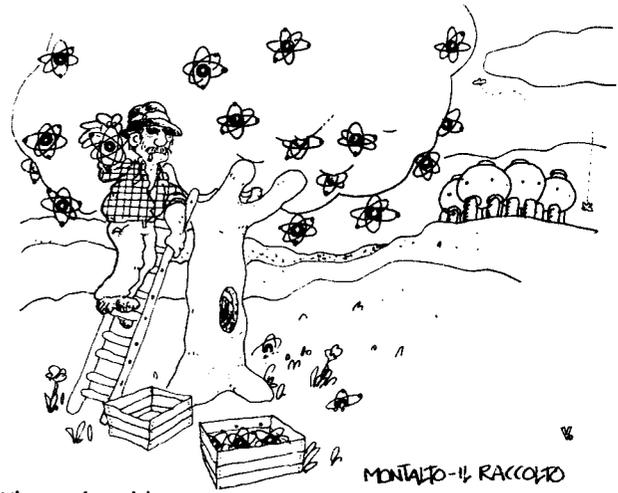
(Music: "My Bonnie Lies Over the Ocean"
Words: Joanna Cazden)

They're taking away all our power
By bringing in nuclear plants.
They talk of technology's flower
We'd rather give safety a chance.

The fish have washed up on the Hudson,
The pipelines have cracked in Vermont,
A poison mist hangs over Millstone.
What more proof could anyone want?
(Chorus)

The companies can't get insurance
The dangers are so plain to see.
How long can they lie to the public
About Public Utility?

They promise to safeguard the poisons.
Plutonium tons they have stored.
But we know there's lots unaccounted for.
And "atoms for peace" go to war.
(Chorus)



When a fuse blows,
When a pipe breaks,
When the core melts down,
I simply remember my favorite things,
And evacuate the town.

Stopping the terrorist Clams at the borders,
Replacing police chiefs who won't follow orders.
Taiwan excursions, South African flings —
These are a few of my favorite things.

Police state tactics and mass infiltration.
Discrediting movements with staged provocation.
Getting hot tips from the ultra-right wing.
These are a few of my favorite things.

When the day comes,
That the nuke's stopped,
When the truth is aired,
I'll try to remember my favorite things,
So that I won't feel so scared.

They're taking away all our power
By bringing in nuclear plants
Like Doomsday machines they will tower
We'll stop them however we can . . .

I'm running my farm on a windmill
I'm heating my house chopping wood
My factory runs on a water wheel,
The sun heats my bathtub real good.
(Chorus)

But folks now are coming together.
Control of our lives we demand.
We think we can handle it better.
Than experts from NRC land . . .

Our friend Sam, he toppled the tower
And Ron sat and froze in the sky.
Two thousand arrested at Seabrook
And our turn will come by and by.
(Chorus)

Chorus:
*Power, power, community power is ours for free!
Power, power, oh bring back my power to me.*

NUCLEAR POWER BLUES

(Music and words: Dave Williams)

The musical score is written on ten staves. The first staff begins with a treble clef, a key signature of one flat (B-flat), and a 4/4 time signature. The melody is written on the upper line of each staff, and the lyrics are printed below. Chord symbols (G, F, C) are placed above the notes. The lyrics are: "They found some fun-ny rocks out on the U-tah flats They though they'd make some mon-ey so they hired some bu-reau-crats They say its what we need to keep us free from care Now we've got nu-clear pow-er ra-di-a-tion ev-ry-where You can't see it, you can't feel it you can't stash it in the hall, you can't serve it up for din-ner it won't an-swer when you call, you can't throw it in the out-house it won't ev-er tall a lie, you can give it life and mon-ey but you can-not make it die."

They found some funny rocks out on the Utah flats
They thought they'd make some money so they hired some bureaucrats
They say it's what we need to keep us free from care
Now we've got nuclear power radiation everywhere.

Chorus:

You can't see it, you can't feel it, you can't stash it in the hall
You can't serve it up for dinner, it won't answer when you call
You can't throw it in the outhouse, it won't ever tell a lie
You can give it life and money but you cannot make it die.

They thought that they could tame it, so they built themselves a bomb
And when they had decided that nothing had gone wrong
They build themselves a power plant with their guards and guns and lights
So their safe stuff would be safer, and we could all sleep well at night. (Chorus)

Well it's the rage in Russia, in China and in France.
Now every country wants their own atomic power chance.
They bleed it right along 'til there's tons of it on store
Then they stock it up in missiles 'til they have a little war. (Chorus)

It's in the Mississippi, it's in the kitchen sink
It's in the snow on Christmas, it's in the milk we drink
And underneath the continent there's tons of it on store
And we only have to keep it safe a million years or more. (Chorus)

Now here's to all the great men who brought us right along
With strong defense and honor — and Business right or wrong
Someday we're bound to meet them in that mansion in the sky
'Cause for all their deeds we can be sure, we can kiss our ass good-bye. (Chorus)



These songs are excerpted from the songbook published by the Clamshell Alliance, Songs to Stop Seabrook By, compiled by Beth DellaValle, David DiGiuseppe, and Jenny Van Pelt. The book is unfortunately out of print at present.

news notes

News about politically significant events in science and technology.

ENERGIZING APARTHEID

Detailed discussions between U.S. ambassador-at-large Gerard C. Smith (in charge of nuclear non-proliferation) and the South African Atomic Energy Board have paved the way to lifting the ban on U.S. shipments of uranium to South Africa, and cooperating on the "peaceful" uses of atomic energy. For a South African promise to not conduct a test of their nuclear weapons, they have been assured of assistance in developing the South African nuclear power industry, which is vital for the survival of apartheid. To remain dependent on oil makes this regime of oppression extremely vulnerable to an oil embargo as might happen if OPEC oil suppliers someday choose (for whatever reasons) to side with the rising tide of black majority rule in Africa.

—info from *New York Times*,
June 30, 1978

U.K. IMMIGRATION FACTS

The right wing's classic exploitation of racism in the midst of Britain's declining economic strength (see *SftP*, May/June 1978) is not based on the facts — let alone on adequate political economy. Prime Minister aspirant Margaret Thatcher has spoken of being "swamped" by people of "different culture" and of the need for immigration restrictions. In 1977, the "nonwhite" population in Britain was less than 4%, the immigration of nonwhites into the country was all of 28,000, the net immigration from the West Indies was negative, and Britain's total population was declining. Britain's Commission on Racial Equality estimates that by the year 2000 the nonwhite population will be 6 - 7%. Of course, as is usually the case elsewhere, immigrants end up competing for the lowest paying jobs where unemployment is highest and where the oppression of the traditional working class is most visible.

—info from *Intercom*,
of the Population Reference Bureau,
May 1978

INSTITUTIONALIZING THE PAYOFF

Determined local opposition that keeps an airport, or power plant, or oil refinery out of a community is no longer an isolated situation. In fact, professional planners are beginning to wonder out loud whether it may soon become impossible — given the increasing sophistication and intensity of opposition — to build large-scale facilities anywhere.

An idea to get around this opposition by literally buying it off has recently come out of MIT's Department of Urban Studies and Planning. Prof. Michael O'Hare, in *Public Policy*, suggests letting local governments decide just how much compensation should be paid individually to local residents, based on the anticipated economic, environmental and social impacts of a project — information (presumably accurate) that would be supplied by the government agency or private company building the facility.

The MIT planners suggest a pay-off mechanism where compensation by developers would not go to community agencies or local governments (the case at present), but directly to original resi-

dents. This is because general aid to communities benefits newcomers — people who may move in because of expanded public services or jobs at the project site — as well as original residents.

O'Hare and other MIT planners feel that a direct pay-off to original residents as compensation for hardships only they suffer — loss of property, change in lifestyle, social disruption, psychological damage — would be enough to temper opposition to most projects. They are confident that the arrangement would be so attractive that more than one community would want to attract the facility at some "price" — and if this were the case, a facility could be "auctioned" off to the lowest cost site, where cost is determined by adding up construction, operation, and compensation costs.

Where the scheme falls short is dealing with those people for whom money isn't everything — like the farmers of Sanrizuka, Japan, or Native Americans on coal-rich reservations, or inner-city residents defending homes before redevelopment bulldozers. Presumably, this is when the state steps in, shoves aside the planners' elegant mechanisms and replaces the carrot of cold cash with the big stick of police power.

The 1978 Regional Conference Is Coming!

September 29,30, and October 1 we'll be gathering at Stony Brook, N.Y. to discuss topics of such national importance such as SftP national structure, fundraising, national participation in the magazine, revitalizing the IDB, national positions on issues, and, of course, our political perspectives.

If you are interested in attending, please drop a note to Mary Verdon, Kelly D Box 871, SUNY at Stony Brook, Stony Brook, NY 11794, as soon as possible. Join in the fun. Come to the Eastern Regional!

Beyond Seabrook

by Scott Schneider

After a year of preparation for the illegal "occupation-restoration" at the Seabrook nuclear plant on June 24th (the fourth occupation), New Hampshire Governor Meldrim Thomson on June 12th proposed a four-day "legal demonstration" on the neighboring 18 acre Seabrook dump — and suddenly it was a whole new ballgame. Was the Governor's offer a victory for the Clamshell Alliance in their struggle to stop the nuke? Or was it cooptation?

Most of the members and supporters of Clamshell had their hearts set on the civil disobedience of a nonviolent occupation; to many, the only way to stop the nuke seemed to be through such non-violent intervention. Yet for several reasons the Clamshell leadership decided to accept the offer to hold a legal rally. The local Seabrook residents — whose support was essential — harrassed by Public Service Company employees, threatened with tax hikes, and buzzed by state helicopters were becoming hostile to the occupation and less willing to cooperate. The occupation, by requiring a strong commitment and a willingness to risk arrest, was an activity that only a few could participate in. Some people even began questioning the effectiveness of occupation tactics.

Educating the public is an important task, and so even though the legal rally didn't interfere with construction at all, it helped educate thousands and perhaps was what was needed now. Although almost everyone connected with Clamshell condemned the process by which the decision not to occupy was reached (because it was made by a small group of leaders rather than using the traditional Clamshell consensus model), in retrospect most seemed to agree that the decision itself was the right one.

Eighteen to twenty thousand people came to Seabrook, making it the largest anti-nuke demonstration this country has ever seen. The rally was a curious mixture of alternative energy fair, Woodstock, and political huckstering — as expected — but there was also a new emphasis on the political nature of the anti-nuke struggle. There was little doubt that people in the crowd had, after two days of speeches, discussions, workshops and demonstrations, firmed their resolve to stop the Seabrook plant and nuclear power in general. But perhaps what wasn't as clear to the demonstrators was that the purpose of stopping the Seabrook plant should not be just to eliminate the very real hazards of nuclear energy or even to start decentralizing and humanizing technology. The real purpose should be to change the relations of power in our society. The pro-nuclear people know this. A pro-nuclear advertisement in the *Boston Globe* before the rally stated very explicitly, "For many the real goal is a major change in American society. Nuclear power is not a central issue itself, but rather the clamor against it is a tool, a lever to be applied in creating an upheaval of our social, economic, and political patterns of life."



Ellen Shub

The potential impact of public action became clear during the sixties, when the Vietnam War met with widespread opposition. But the anti-war movement represented more than just opposition to one particular war. It was an attempt at popular control over foreign policy. And although it didn't concretely change the relations of power substantially, it did change the consciousness of the entire country and of the world. People became skeptical of government and of our role in foreign political struggles. They became aware that we could not leave it up to the experts to make decisions for us, since the interests politicians were looking out for were not our interests but those of corporations with foreign investments and the elite which owns those corporations. The anti-war movement was a political education for millions of people, politicizing many of our generation. The anti-nuclear movement has similar potential.

The government's response to the nuclear struggle has been predictably mixed. One week after the Seabrook rally, the Nuclear Regulatory Commission (following two demonstrations outside its meetings in Manchester, N.H. and Washington, D.C.) voted to halt the construction of the Seabrook plant until a safe cooling system could be devised or a better site found. Meanwhile, that same week the Supreme Court announced that "Congress's concern for stimulating the involvement of private industry in the production of electrical energy through the use of atomic power" was sufficient reason to limit the liability of nuclear plants to only \$560 million (the government's own conservative estimates of potential damage from a nuclear accident includes \$14 billion in property damage, 3,300 deaths, over 90,000 illnesses, 3,200 sq. mi. contaminated, and a dramatic rise in the cancer rate and a number of genetic defects



Ellen Shub

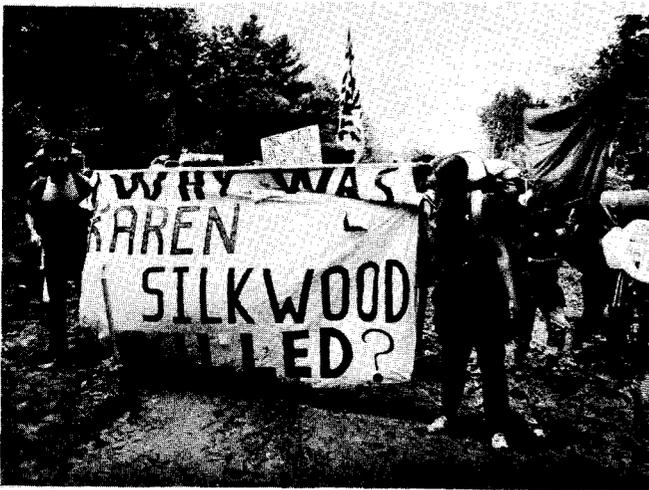
During the complacent seventies, the anti-nuclear movement has become a major focus of radical activity. But more importantly it represents a growing mistrust of high technology and resentment against the arrogance of science. People are demanding a say in how technology is to be developed, which risks we should be willing to take, and at what costs. The movement has been gathering steam and gaining widespread support all over the country and from many segments of society.

The pro-nuke supporters feel threatened and have become more vocal, promulgating the usual lies about the movement being a threat to our standard of living and our jobs. In fact, this country can get along very well without nuclear power, even in the face of an energy crisis and oil embargo. The government recently estimated that our under-utilized hydroelectric resources could provide the equivalent of 85 nuclear power plants(2). Solar energy is feasible now and, according to the Energy Department, could be providing a very significant portion of our energy needs, especially

for home heating(3). Co-generation of electricity from industrial waste heat could generate much of our industrial electricity, and energy conversion will yield us the biggest savings yet(4). We could have our energy cake and eat it too, by cutting waste, better utilizing our present resources, and using clean alternative sources of energy.

It's also clear that nuclear power has not and cannot be a solution to the unemployment problem. The jobs it creates are too few and too temporary. Once nuclear plants are in operation, they require few operators, and the safety of jobs in the plants, given the serious effects of exposure to low-level radiation, must be questioned. In addition, the plants only last for 20-30 years, after which they must be shut down, and no one at present even knows what to do with them then (i.e., how to decommission them). Developing, producing and maintaining alternative energy technology would provide much more steady work for people.

The nuclear power picture looks even grimmer when we check the economics of the situation. It is very simply not economical anymore. Safety regulations, environmental safeguards, the cost of waste storage and decommissioning, the construction delays, and inflation have eaten into the profits to be had from nuclear power. The companies have tried to pass these costs on to the consumer, but rate hike battles are becoming commonplace. Who wants to pay *more* to get energy from a nuclear plant which is unsafe, unhealthy to live near, and unecological?



Ellen Shub

The power companies are thus under pressure from anti-nuke groups, governmental regulations, and skyrocketing costs to stop this nuclear nonsense and are beginning to come to their senses. Construction on many plants has halted, and currently there are far fewer new nuclear plants being ordered. As usual, economics prevails. The industry will only stop building and running nuclear plants when it can no longer profit from them. And that day is fast approaching.



Ellen Shub

The real question to ask then becomes: So after they stop, what do we do next? The anti-war movement, because it had one goal in mind — to stop the war — fizzled when the war ended. When the Clamshell finally stops the Seabrook nuke and eventually all nukes are stopped, then what do they do next?

In reality, the nuclear industry is merely a symptom of the more fundamental problem, capitalism. As rally speaker John Gofman, who worked on the Manhattan Project to build the first atomic bomb, pointed out: "Nuclear power is a symptom, albeit a very serious symptom, of societal disease . . . The disease is the existence of privilege and power." As long as there are profits to be had, the industry will survive. And as long as it is "acceptable" and "healthy" to make profits without regard to the hazards and costs to the people, the problem will continue. People and the environment will continue to come after profits, and concerns for safety, environmental hazards, and dehumanization of work will be secondary.

And this is the reason that the anti-nuke movement has potentially such a broad appeal; it addresses people's immediate concerns, their own welfare. By beginning to speak to people about their concerns, the anti-nuke movement could broaden its constituency and build ties with the rest of the movement on the left. And the anti-nuke movement is beginning to do that. By fighting rate hikes that result from nuclear power, by building alliances with those in labor who see through false threat of lost jobs and are concerned for the safety of workers and for long-term employment, and by cultivating the realization that a good clean environment is important and *is not* incompatible with creating jobs for people, we can begin to create the same skepticism that the anti-war movement and Watergate encouraged. This time, though, let the goal be to attack the problems at their roots rather than performing cosmetic surgery. □

My second suggestion is that you present brief excerpts from or critiques on some of the many splendid books which you list in *SftP* every month. I'm certain that this would be a big inducement for more people to buy them, and for those of us who don't have that ready access it would be a much welcomed addition to an already great magazine.

All Power to the People,
Victor Hubbard
Joliet, IL

Dear *SftP*,

SftP is something I often intend to read but never quite get to. When I do read it I'm usually glad I did. For example, the May '78 articles on lesbian health & professionalism in nursing were excellent. Both were clearly written — enough so that I have a chance of getting high school students to read them! That's the main reason I keep the magazine — as a potential resource for science classes.

Suggestion: more book reviews of science fiction books & movies. A lot of politics is being passed out to the general public in that form nowadays, and someone needs to take a look at it. For example, the novel *Gloryhits* (which was written by someone who knew a lot about *SftP*, mentioned by name no less).

Mary Moffett
East Falmouth, MA

Dear *SftP*,

I just wanted to point out that I disagree with Jon Campbell's (pseudo?)-liberal postscript [see letters page, last issue of *SftP*]. The comic strip did not strike me as pornographic (although if one chooses to view it as such, then I think you *should* print pornography). A comic strip is an excellent way to illustrate the problems lesbians face when they seek medical attention. In addition we are treated to a view of a warm lesbian relationship, something gays see so rarely outside the gay press. Does Jon object to a drawing of two naked people, or to the fact that they're both women?

Anyway, I better sign off before I produce a tract on the conservative backlash, and rise of censorship.

Bye for now,
P.F.
Saskatoon, Sask.

Dear *SftP*,

The topics covered in *SftP* are interesting and important. (e.g. health issues, food, etc.) I like the nonsectarian and non-authoritarian emphasis of the magazine. I'd like to see articles or letters on successful and unsuccessful attempts of people to change things in all spheres of our life. For example: how can (and should) scientific workers relate science to social issues at the workplace? Some of the articles have been very good — obviously a lot of work had gone into researching the subject. However, some shallow articles are still finding their way into the magazine.

Also some articles are elitist since they use political terms and phrases understood only by a small handful of people. The authors of such articles should be encouraged to write in plain English. It would be most unfortunate if a large part of our readership has to skip potentially important articles.

I am somewhat perturbed at the rather uncritical analysis of some of the articles on China. (e.g.: "Science Walks on Two Legs.")

It should be obvious that the quality or quantity of scientific or technological achievements has little to do with how elitist, sexist or authoritarian a society is. A useful question to ask is how much control do people have over their own lives— directly, and not through some bureaucracy or party that claims to act in their interests.

The reporting on scientists in other countries is interesting and useful. (e.g. — repression in Argentina). More articles (possibly shorter news notes) should be encouraged.

I was surprised to see that there were no references to anti-Semitism in the article on repression of scientists in Argentina. It would be sad to see anti-Semitic articles (since they deceive by omission) getting into *SftP*.

I believe that the expose aspect of many articles relating science to social affairs is good. Perhaps we should have some creative and imaginative articles on how science would or should operate in a better society. It would be nice to have positive examples to show people. Such articles would certainly help politically isolated scientists get their ideas across to their fellow workers.

Overall impression of *SftP* — a very good and exciting magazine.

Evan Morris and Barbara Kahan
Surrey, England

P.S.: The "Resources" column is an excellent idea. More articles on the physical sciences would be welcome.

(A letter to the editor and reply by the Editorial Committee on the omission of the anti-Semitism issue in the report on Argentina appeared in a subsequent issue: *SftP* Sept/Oct. 1977—Ed.)

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SECOND SftP CHINA TRIP: Itinerary Report

The photographs accompanying this report are by Nancy Edwards, an SftP member who was part of the delegation. We are looking forward to publishing more photographs from the trip to accompany more detailed articles in subsequent issues of SftP.

by the SftP China Delegation



Hemp factory workers: Chuchow, Hunan Province, June 1978.

Hong Kong, July 2, 1978: We have just left the Peoples Republic of China (PRC) after a one-month visit. Our itinerary took us from Hainan Island in the south of China to Peking in the north — with many stops scattered in between. Although the main focus of the trip was to study the current organization and objectives of agricultural (especially food) production and its related scientific and decision-making processes, we were able to examine industrial developments in both the countryside and the cities as well. At the same time, we collected a small mountain of impressions of what it might be like to live in the PRC. We would like to share our information and impressions with others — therefore, we are preparing articles, a book, and slide shows for circulation.

The twelve members of our group met together for the first time in Hong Kong on May 30 to begin four days of intensive meetings before entering China on June 4. During these meetings we came to the realization that several significant modifications to the itinerary we had submitted to the Chinese were desirable if we were to achieve our goal of studying how science and technology are organized in China to meet people's needs. We also spend much time compiling detailed lists of questions to be asked in various situations such as communes, state farms, industries, research institutes, universities and food outlets.

June 4th, the big day!! We took the Kowloon train from Hong Kong to China's border where we walked a few hundred meters across the bridge into Shunchun. Here we were greeted by Comrade Wu, who five years ago had met the first SftP delegation. We were treated to our first of many delicious meals before learning that we were to be given the opportunity to be one of the first western delegations to visit Hainan Island — one of the places we had requested on our new itinerary. Our host, the Scientific and Technical

Association (STA), had received special permission for us to visit this agriculturally important tropical island in the South China Sea. This was the first demonstration of the extraordinary attention the Chinese gave to our itinerary requests.

We then boarded another train for Kwangchou (Canton) and after a short ride were met at the railroad station by our Kwangchou hosts, including representatives from the local STA and leading members from the institutions and organizations in Kwangtung Province that we were to visit during our stay in that area. Similar warm greetings and receptions were to be repeated whenever we arrived at a new locale. That afternoon and evening we did some sight-seeing and attended a musical event in Kwangchou.

The next morning we flew to Haikou, the capital and administrative seat for Hainan Island. The five days we spent on this island were very intensive. We visited handicraft factories, a state-owned farm for educated youth, Hainan's South China Academy and Institute of Tropical Plants, a latex processing factory, and production brigades of two ethnic minorities, Li and Miao. Some of the crops we saw were cocoa, coffee, latex (rubber), oil palm, pineapple, tea, and pepper. We also visited a state farm for returned overseas Chinese (Chinese living in other countries who retain their Chinese citizenship). Both at the state farm and later in Haikou we were introduced to groups of Chinese returning from Viet Nam.

We flew back to Kwangchou on June 9. After visiting Chungshan University and the No. 7 Middle School, we proceeded on to the city of Changsha in Hunan Province. Here we split up into two subgroups for the first of four times. One subgroup visited Chuchou, a small industrial city south of Changsha, that had its origins in the Great Leap Forward (1958-9). The other subgroup went to nearby Taoyuan County for our first exposure to the

enormous task of agricultural construction in China.

During the remaining half of our trip, our journey continued through Shanghai, Soochow, Tsinan, Shantung Province, Peking, and Hobei Province. We saw food and grain processing plants, fertilizer plants, textile mills, tractor factories, a railroad freight car factory, agricultural academies, the four-level agro-science network in Wu County, the Shengli oil fields, a worker-peasant village, a variety of production brigades, land reclamation projects, water conservancy projects, and more. In Peking we spent some time sightseeing (Ming Tombs, the Great Wall, the Forbidden City) as well as visiting the Institute of Zoology and the National Agricultural Exhibition. Before leaving Peking we were treated to the last of many official banquets given in our honor. This one was hosted by Chou Pei-yuan the acting director of the STA and president of Peking University.

Throughout our trip we had the opportunity to talk with both workers and administrators, including many involved in research coordination and planning at provincial and national levels.

On July 1 we flew back to Kwangchou where some of the delegation continued conversations with research workers that had begun a month earlier, while others of the delegation spent some time wandering around the city before boarding the train back to Shunchun and Kowloon on July 2.

We are now planning and developing our outreach work and attending to the seemingly countless details related to it. Included among our projects are several articles for future issues of SftP. We realize that a month's time is inadequate to gain a thorough understanding of science and technology under socialism in China, but we feel that we have learned a great deal and wish to communicate our findings as broadly as possible. □



EDITORIAL GUIDELINES

The goal of **Science for the People** is to examine the role of science and technology in society, in order to encourage progressive political activity.

Articles in **Science for the People** come out of the experience and interest of its readers. We urge everyone to contribute to the magazine. We welcome articles written collectively. Good articles can evolve from collective and individual political work, from research, or from other activities. Articles can take the form of book reviews, personal accounts, reports of events, analytical essays, etc. Writing done for another purpose can often be adapted for **Science for the People** and is welcome.

Contributions to the magazine should: 1) deal with issues of science and technology from a radical perspective; 2) sharpen political awareness; 3) stimulate political action on issues of science and technology. It is important to use straightforward English and to keep technical terms to a minimum.

Procedure: 1. New articles: submit 3 copies (manuscripts are not usually returned, so don't send originals unless

you have kept a copy for yourself). The Editorial Committee works hard in revising articles and discussing them with authors. You may want to send an outline of a proposed article to the Editorial Committee in advance for response to content and emphasis, and suggestions for source materials. Final substantive changes are cleared with authors. In the "About This Issue" column, the Editorial Committee may describe the range of opinions on a particular issue, point out unexplored questions, or draw some additional implications from the articles.

2. Articles written for another purpose: submit 3 copies, along with a letter describing the article's origin, and whether or not it may be adapted.

3. Current Opinion: Submit 3 copies. Contributions should be about 500 words, tightly argued positions on timely subjects, including occasional contributions from the Editorial Committee. The Editorial Committee may discuss with authors changes which clarify debate.

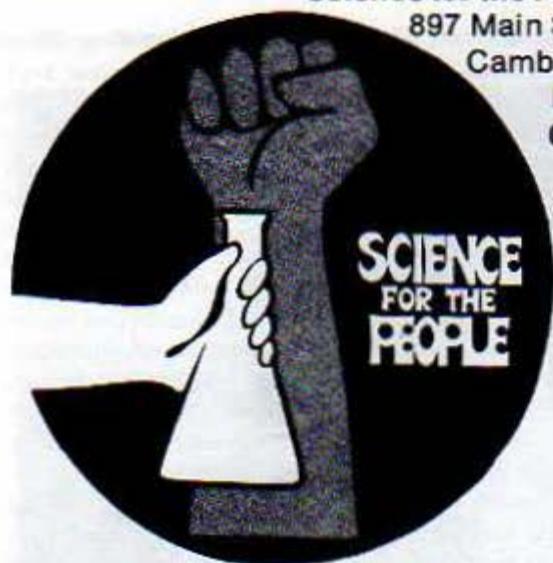
4. Readers are also encouraged to contribute letters, News Notes — news

items on the social and political role of science and technology, and especially reporting people's activities around these issues, Chapter Reports and SftP Activities — brief summaries essentially assured of publication, and graphics — cartoons, designs, photographs, etc., not necessarily original but with credits.

Science for the People is a collective effort of the Editorial, Production, and Distribution Committees (volunteer) and the Magazine and Office Coordinators (paid). All committees are accountable to the membership of **Science for the People** through the annual Eastern Regional Conference. Members of **Science for the People** outside the Boston area are encouraged to participate (by mail or in person) in the work of the Editorial Committee. People interested in reviewing and editing articles should contact the Magazine Coordinator through the Boston SftP office.

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