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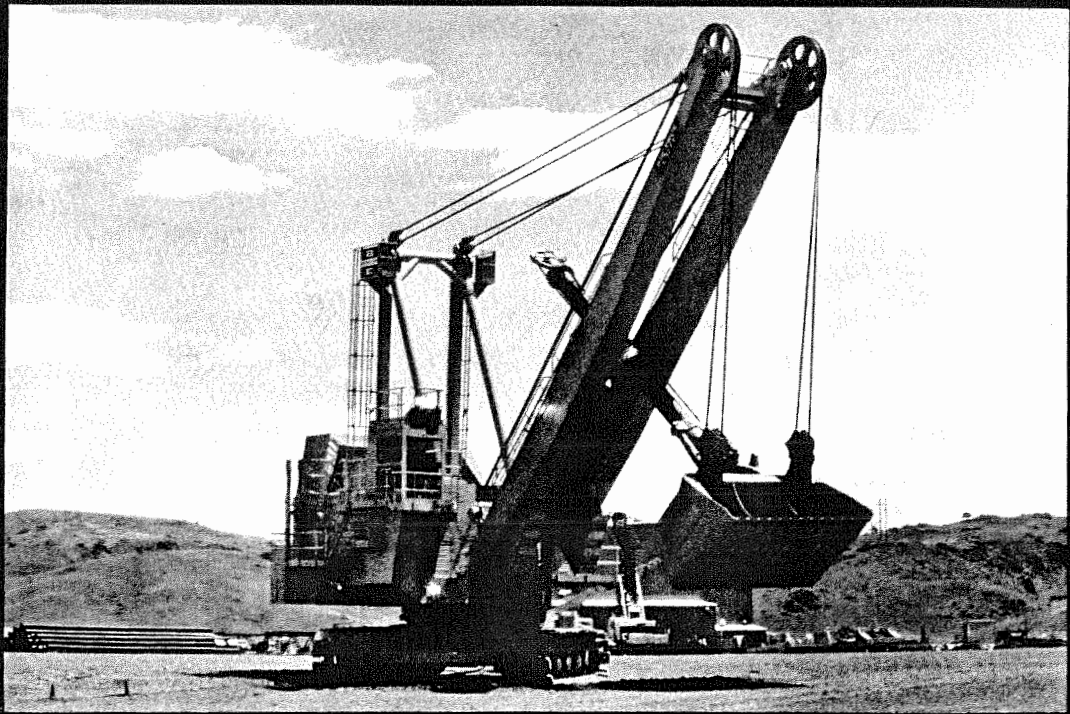
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Introduction

In 1977 construction began on the first nuclear reactor in the Philippines, part of an ambitious development program initiated by the Marcos dictatorship. As well as aiding the growth of industry, this program was to bring electricity to the urban and rural poor. Walden Bello, John Harris, and Lyuba Zarsky show convincingly that this "trickle-down" effect has not occurred, nor will it occur under existing social conditions, where much of the electricity produced supports export-led industrialization and personal consumption by a local elite. Yet electrification has helped legitimate the Marcos regime, it has forged an alliance with technocrats and bureaucrats, and has helped to fight counterinsurgency.

Why did Marcos choose nuclear power, rather than fossil fuels? The authors argue that the main determinant was U.S. influence, though other factors entered, such as enhancing the regimes prestige by achieving "modernity." Yet the Westinghouse reactor has been a thorn in Marcos' side. Plagued with exposures of corruption and financial waste and the discovery that it is built on active earthquake faults, it has become a unifying symbol for opposition to the regime.

Nuclear Power in the Philippines: The Plague that Poisons Morong!*

by Walden Bello, John Harris, Lyuba Zarsky

Introduction

A complex convergence of strategic, political and economic factors underlies the construction of the first nuclear power plant in the Philippines—a Westinghouse Light Water Reactor exported by the U.S. In this essay, we evaluate proponents' arguments for nuclear power in the Philippines and demonstrate that the pro-nuclear ideology is unconvincing. By examining nuclear power in the context of export-oriented industrialization, conflicting class interests, and U.S.-Philippines relations, we explain why nuclear power was adopted—an analysis not easily generalizable to other third world countries which have chosen the nuclear option.¹

The nuclear deal provoked a broad-based resistance in the Philippines which identifies nuclear power with US imperialism. Closely linked to a Pan-Pacific self-determination movement opposed to all nuclear intervention, the Philippines' resistance contains important lessons—and opportunities—for the US anti-nuclear movement and the Left.

*Graffiti on walls in town of Morong, province of Bataan, Philippines.

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I. The Philippines Reactor Controversy

The export of a 600 Megawatt Westinghouse reactor to the Philippines reveals the factors at play and the odds at stake in the rush to nuclear nirvana on the Western Pacific Rim.² The \$2 billion plant has been controversial since construction began in 1977. Intense local opposition blossomed when erosion from the coastal site clearance increased turbidity in spawning grounds and destroyed the local fishing industry, the economic base for 70 percent of the villagers. Road building also destroyed valuable crop and grazing land. By 1979, the reactor had become the center of an international campaign against nuclear exports stretching from the Philippines to Australia, Japan, the U.S., Canada, and Europe. Twenty thousand Filipinos sent petitions to the U.S. Nuclear Regulatory Commission, delivered by the Philippines Movement for Environmental Protection. Intense U.S. opposition was spearheaded by a coalition of liberal Washington public interest groups and the grassroots anti-Marcos Philippines movement.

The first revelation to shake the deal was the payment of a multi-million dollar "agent fee" by Westinghouse to Philippines' dictator Ferdinand Marcos' brother-in-law, Herminio Disini. Disini also owns the construction sub-contractor and insurance companies receiving juicy government contracts for the reactor. The next revelation was that the site—on the coast at Bataan—is also the slope of a volcano, the eruption of which the International Atomic Energy Agency termed a "credible event." Like the Westinghouse plant at Diablo Canyon in California, the area is riddled with faultlines. Technical incompetence and subcontractor kickbacks also indicate shoddy construction and inadequate quality control, adding incalculable hazards to those already intrinsic to nuclear power operation in an area where over 7 million, largely malnourished and immobile Filipinos live within a 50 mile radius.

Mounting local opposition from peasants and fishing people was met with military occupation of the region, the arrest of dozens, and the torture and murder of at least two local opponents.³ Faced with increasingly vociferous international and elite Filipino opposition (especially in the churches and universities clustered around the Philippines Movement for Environmental Protection) which could not be so easily contained, Marcos suspender reactor construction twice and ordered a safety review commission. The commission whitewashed the Filipino authorities regulatory and siting practices, and demanded that Westinghouse upgrade safety features.⁴

It is clear to local opponents that the reactor is not in their interest. As one told a visiting priest, "This nuclear plant is not really for electricity. It is so our President will be powerful."⁵ More difficult to establish has been an effective counter to the proponents' argument that the local costs and repression are unfortunate, but necessary to reduce oil import costs and vulnerability to supply loss. Evaluating this claim exposes the deeper

political and economic logic which lies beneath the corruption and the pro-nuclear stance of the regime.

It is relatively easy to show on narrow discounted cash flow terms that nuclear power in the Philippines today is likely to be more expensive than imported oil. Using realistic assumptions and cost escalation scenarios, our detailed analysis showed nuclear power to range from about the same to 30 percent greater cost than oil in a life-cycle analysis.⁶

The primary factors in determining the relative cost of oil-fired versus nuclear-powered electricity are the escalation rates of fuel prices and costs of capital respectively. While the US Export-Import Bank provided cheap financing, the delays due to the complexity and intrinsic problems of nuclear construction, plus post-Three Mile Island plant reconfigurations, have resulted in a nearly 100 percent over-run on nuclear capital costs. Oil price (de) escalation rates are of course a wild card; we used, therefore, a wide range of sensitivities to account for this uncertainty. In no case did oil present an overwhelming economic advantage relative to nuclear power. The worst case (cheapest capital cost assumptions for nuclear power, highest real oil price annual escalation rate of 6 percent) resulted in about the same costs for each technology. Of course, the Philippines is not limited to oil as a technical alternative to nuclear power. It can also import coal, develop hydro-power, geothermal power, and renewable energy resources etc. Since nuclear power's cost advantage vis-a-vis imported oil is a Government justification for the nuclear option, however, we chose oil for a conservative, worst-case comparison with nuclear power. In short, as a recent World Bank report concluded, "The Philippines is paying a very high financial price for its first nuclear development."⁷

Additional non-economic costs associated with nuclear power add to the relative unattractiveness of nuclear power in the Philippines.⁸ These include technological uncertainties; the low diversity and highly politicized uranium supply; technological dependence arising from arcane and complex atomic technology; and unique environmental hazards emanating from billions of curies of radioactivity in a geologically unstable and an undeveloped regulatory and personnel environment.

The Filipino opposition, however, has pushed the argument beyond technological and environmental problems to the deeper level of class interests in the success of the project. By critically examining the electricity generation technologies and consumption patterns of electricity, the Filipino movement challenges the notion that productive forces are socially "neutral." Instead, they argue, social relations are embodied in the material infrastructure—such as the reactor and particular forms of electrification—constructed by the regime.

II. Electrification in the Philippines

The U.S. State Department defended the Philippines reactor in 1978 with this assertion:

An adequate and growing supply of electric power is particularly essential for developing countries. Agriculture, manufacturing, schools and hospitals as well as every other sector of the economy and all levels of society depend on electric power, and there can be no significant development without it.⁹

Economic development is the ultimate—and unsound—premise for the conclusion that nuclear power in the Philippines is justified.

The Philippines has undertaken one of the most ambitious programs of centralized electrification in the Third World. Aided by the World Bank, U.S. Agency for International Development, and the U.S. Export-Import Bank, among others, the Marcos Government plans to make electricity available to industry and to all barrios by 1990.¹⁰ In 1977 the Philippines National Power Corporation unfolded plans for an almost five-fold increase in total generating capacity, from 2,800 to 16,000 MWe^a.¹¹

During the late 1970s, electrification accounted for 4 percent of GNP and for 40 percent of government spending in public services.¹² To carry out its program in the decade 1978-1987, the Marcos government planned to invest \$9 billion, plus complementary investment of at least \$72 billion in transmission, distribution, and end-use equipment.¹³ Although the scale of the program was cut back in 1980 due to World Bank influence, electrification remains a high Government priority. The benefits of this massive program accrue differentially to the rich and poor—as revealed in the patterns and trends of electricity use.

Electricity in Production

Virtually every aspect of the Philippines economy has been subordinated to a strategy of export-led industrialization.¹⁴ Set in motion in 1971, production for the world market grew out of the failure of import substitution in the 1960s.¹⁵ The new strategy was the result of an intense struggle between a wealthy protection-seeking domestic elite and international and domestic export-oriented elites seeking access to cheap labor and raw materials with as few restrictions as possible.¹⁶

(a) *Industry:* Patterns of electricity use reflect the export-orientation strategy. Urban industry accounted for 56 percent of total electricity consumption in 1974. In the Greater Manila area, the copper-exporting Maridunque Mining and Industrial Corporation (partly owned and managed by U.S. interests) is the single biggest user, followed by U.S.-controlled chemical industries and Japanese and U.S.-controlled steel industries.¹⁷

The consummate expression of export-oriented industrialization are Free Export Zones, such as that in Bataan to be connected to the nuclear plant presently under construction. A free export zone supplies cheap labor, a ban on non-governmental unions, a tax shelter, and cheap services to predominantly multinational firms which must export at least 70 percent

a. A MWe is a unit of electrical power, megawatt, sufficient to light 10,000 100 Watt light bulbs all at once. A GWE is 1000 MWe.

of their output.¹⁸ "Total electrification" also aims to supply electricity to other "free export zones" as well as to "bonded" villages (a group of villages transformed into a factory, mostly producing textiles for export).¹⁹

Contrary to AID reports,²⁰ non-export-oriented rural industry has not resulted from rural electrification. A recent assessment acknowledges that the program has not had much impact on "the establishment of new [rural] businesses..."²¹ The basic problem for rural industries is the lack of effective demand for beverages, canned food, clothes and industrial consumer items they could turn out, rather than the availability of electricity. The bulk of the estimated 40 percent of the Philippines labor force that is unemployed or underemployed is in the countryside. Falling real income and inequitable land ownership and income distribution constrain the demand for mass consumption goods and preclude the possibility of an effective link between electricity, industry, and a higher standard of living in the countryside.

(b) *Agriculture*: Asked in a 1978 Congressional hearing if electricity serves rural areas in the Philippines, Eximbank President John Moore replied, "I would imagine so, to some degree."²² In fact, only 2.4 percent of total electricity is consumed by the *combined* sector of agriculture, dewatering (removing rice paddy water), fishing and forestry in the Philippines. Yet this sector includes over half the active labor force and is the backbone of the economy.

By 1976, ten years after U.S. AID initiated intensive development, rural electrification powered the irrigation of only 34,100 hectares of riceland, less than 3 percent of the country's 1.4 million hectares then under irrigation.²³ Of more than 10,000 irrigation pumps, only 425 were electric as of 1976. Commenting on the AID-sponsored MORESCO model cooperative (Mindano Island), an AID consultant admitted in 1978 that seven years of electrification had not resulted in a "significant increase of the number of electric pump irrigation systems."²⁴ In 1975 the seven users of electric pumps in the cooperative irrigated only 108 hectares. This dropped to 100 hectares when the biggest user reverted to a cheap, reliable gravity-feed system. One hundred hectares is about 5 percent of the total irrigated riceland in the area.²⁵

Furthermore, agriculture is not dependent on electricity-intensive mechanical or chemical inputs produced in the Philippines or made available by imports paid for with foreign exchange from electricity-intensive exports. Only 15 percent of Filipino farms use mechanical power. The overall rate of application of energy-intensive chemical fertilizers is also relatively and absolutely low.²⁶

Indeed, the past, current, and planned development patterns in the Philippines leave little room for such industries. The import-substitution strategy of the early 50's to late 60's, the first phase of Philippine industrialization, consisted mainly of the production of finished consumer goods for an urban

middle-class market. The focus of export-led industrialisation, is the production of raw materials and light consumer goods for export to the advanced industrialized countries.²⁷ As long as agriculture is subordinate to export-led industrialization, the relative flow of electricity into agriculture is unlikely to increase as a result of a mere increase in electricity supply—nuclear or non-nuclear.

Electricity in Household Consumption

(a) *Urban Consumption:* Forty percent of the urban population used no electricity in their houses in 1975²⁸ A large proportion of urban Filipinos (over 25 percent in Manila) reside in dense squatter settlements with minimal electricity service.

The urban poor use kerosene and sometimes one or two 40 watt electric bulbs for lighting; gas, kerosene or wood for cooking; and batteries for a radio. One survey of Davao City in Mindanao revealed that 36 percent of the poor scavenge for wood and another 40 percent buy it for cooking. If income increases, kerosene and not electricity replaces wood. Fifty percent of the households had not electricity or only 1 or 2 lightbulbs, and the number of households connected to electricity had not increased from 1972 to 1974.²⁹ The urban poor in cities such as Davao actually constitute a *shrinking* market for electricity as a decline in real wages has coincided with rising real cost for electricity since 1973.³⁰

While no data are available for Manila, energy studies of other Third World cities show that it is the urban rich who consume the major portion of the electricity for residential use because they own and use a far greater number of appliances than the poor.³¹ The use of these appliances in Manila boosts the peak demand for electricity, decreasing the load factor, and stretching the generating capacity of the electrical system to the point of brown-outs and loadshedding.³² Such peak-demanding electrical appliances should be suppressed by pricing policies in terms of system efficiency rather than generation expanded—but generally the rich win out and keep their appliances.

(b) *Rural Consumption:* Nearly 70 percent of the Philippine population lives in the countryside. Only about 18 percent of the rural population (which includes provincial towns and cities in the Philippines statistics), however, were connected to electricity in 1978. While this is 11 percent more than in 1975,³³ it is unlikely that this rapid growth rate can be sustained over the long run. Existing rural electric cooperatives stop expanding when between 25-40 percent of the homes are connected in the area where electricity is available.³⁴ This suggests that the system will reach saturation between 1981 and 1985 at the planned 20 percent annual growth rate.

Further penetration is constrained by absolute poverty and inequitable income distribution in the countryside. A U.S. AID evaluation team reported recently “that very few fishermen, small tenant farmers, landless

laborers . . . and even semi-skilled factory workers can afford electricity in their homes." "The adopters of electricity," they report, "are larger tenant and landowning farmers, shopkeepers, mechanics, administrative employees, that is, those with skills and education. . . . We estimate that approximately 40 percent of the Filipino rural poor are not able to afford power under the current rate levels and tariff structures."³⁵

Perhaps the early proponents of rural electrification hoped that income distribution would improve with time, and with it, the success of rural electrification. Since the program was initiated in 1968, however, the real wages of rural laborers and tenant farmers have plunged.³⁶ At the same time, the distribution of rural income became more inequitable.³⁷ U.S. AID and National Electrification Administration surveys reveal that where electricity is available, the benefits accrue to a small rural middle or upper middle class.³⁸ As RAND Corporation analyst Guy Pauker concludes in a report to the U.S. Department of State,

What rural electrification [in the Philippines] can hope to achieve is the availability of power in the villages, regardless of the volume of effective demand among the rural population which on average will remain too poor to afford electric amenities in their homes.³⁹

Furthermore, as AID consultant Judith Tendler remarked,

The rural poor do not themselves place high value on the acquisition of household electricity. When villages without electricity were polled about their preferences, electrification is low down on the list, with highest priority being given to services like health and water supply.⁴⁰

(c) *Indirect Consumption:* Electricity is also consumed indirectly, embodied in goods and services produced with electricity, or imported and paid for with foreign exchange earned with electricity-intensive exports. As the determinant of final demand and thereby of intermediate electricity demand, income distribution is a reasonable crude proxy for the indirect flows of electricity into personal consumption and wealth. Government figures show that 10 percent of Filipino households receive 38 percent of the total household income; the bottom 40 percent receive 16 percent; and the bottom 10 percent receive only 1 percent (1975 figures).⁴¹ A rich minority, therefore, purchases most of the electricity embodied in goods and services, as well as most of that consumed directly in the household.

President Marcos' electrification strategy favors those interests benefiting from an export-led strategy. Apologists claim that eventually its benefits will "trickle down" to the poor majority. This hope is refuted by the 40 percent decline in the real wages of urban workers between 1972 and 1974, a decline which has continued. This plunge stemmed from a ban on strikes, tight control of labor organizations, high inflation, and other repressive anti-worker policies required to implement the development strategy dictated by creditors.⁴² A similar situation exists in the countryside, compounded by the failure of land reform.⁴³

Only the most heroic optimist in the U.S. Government could ignore the warnings of its own eyes and ears. Gordian Associates bluntly informed the U.S. Department of Energy in 1978 that Marcos' industrialization strategy had "failed to make significant contribution to the direct satisfaction of basic human needs of the population..." Instead, the report concludes, the major benefits have accrued to a small urban elite.⁴⁴ As RAND Corporation consultants Gerald C. Hickey and John Wilkinson reported to U.S. AID:

If Marcos is counting on "trickle-down development" to gain his place as one of the great leaders in Philippine history, it is contrary to most of the evidence of the past twenty-five years... The record in the Philippines shows that most of the Filipinos will never benefit from economic growth until fundamental reforms are made.⁴⁵

III. Electric Power and Political Power

The preceding analysis demonstrates that "total electrification" perpetuates and exacerbates the exploitation of the majority of Filipinos under the export-oriented development program. There is at least a *prima facie* case that the mere provision of more centralized electricity—including nuclear power—will not benefit most Filipinos under the current regime. This conclusion does not advocate or entail a non-electric arcadia for Filipinos as a development objective. Indeed, it says nothing about the potential nature of a benign, equitable, or efficient energy strategy in the Philippines. Rather, the analysis demonstrates that the outcome of current electrification and development strategies is a dark future for the majority.

While electrification in the Philippines may be explained partly by its necessity for export-oriented industrial interests, it also legitimates the Marcos regime and cements the class alliance of technocrats, bureaucrats and cronies from which he derives his power. The accumulation of political power accompanying centralized power generation must also be analyzed to explain the regime's emphasis on electrification.

The program follows directly from the development strategy imposed by Marcos. As a power planning paper put it,

During the period of martial law, decisions are being made to move the country forward economically. If these decisions are firmly rooted and well accepted by the majority at the time elections are once again held, the electrification program will move forward, and the loads for planning will undoubtedly develop and may indeed be exceeded. On the other hand, *if martial law is ended prematurely* and the economic decisions are reversed, the load may prove too high. [our emphasis]⁴⁶

Nuclear power coincided with the centralization of the energy bureaucracy brought about to implement this program. Plans to electrify the island of Luzon with 11 nuclear reactors and a number of huge hydro-electric power

stations required government consolidation of the country's 436 utilities, the expropriation of the giant Manila Electric Company from Eugenio Lopez, a bitter rival of Marcos, and the integration of all the separate energy administrations into a super-agency, the Ministry of Energy.⁴⁷

Electrification and Counter-Insurgency

Rural electrification is also an integral component of the counter-insurgency efforts of the regime. AID consultant Judith Tendler asserted that the AID-backed effort "received a major boost from the government because it was seen as crucial to one of its basic political objectives—to win support away from the Communists in the countryside."⁴⁸ This claim was echoed by another AID official, who described the program as "planting the flag in bandit country,"⁴⁹ and by Marcos himself: "The social and political effects of rural electrification have been beyond our wildest dreams...I would therefore say that electrification has become one of the pillars of stability."⁵⁰

The programs consolidate the tenuous urban-rural ruling class alliance built by Marcos after the declaration of martial law and simultaneously weaken the power of the opposition. The most ambitious programs of rural electrification are in guerrilla zones like Samar, a major stronghold of the New People's Army, and Lanao del Sur, a key base area for the Moro National Liberation Front. "Peace-and-Security Lighting" makes rural areas inhospitable to rebel forces. Government control of electric supply enhances Marcos' power over potential dissidents. The AID-supported "electrical cooperatives" also draw support for the government from the rural middle classes. Cooperative management boards are filled with "respected middle class members of society," and transmission lines are connected primarily to town centers where small landlords, merchants, and professionals reside. The majority of poorer households in cooperative areas remain unelectrified, except along the roadsides where distribution lines are strung.⁵¹

Whether the poor's low priority for electrification, coupled with the local elites' conspicuous personal use of electricity, directly affects the severity of local class struggle—or instead results in peasant-worker disaffection from the central regime—is unknown. Existing studies of local perceptions of rural electrification are oriented towards easing or justifying central implementation efforts and ignore local political contexts and "envy" effects. A speculative hypothesis is that rural electrification probably exacerbates local disaffection from the central regime in the more politicized rural areas, and possibly consolidates the regime's local hegemony in regions without popular organization. It is clear, however, that lack of participation in the benefits of nuclear electricity contributed to the intensity and eventual politicization of local opposition to the Bataan plant.

IV. Nuclear Power and Strategic Power

The political rationale of increased electrification does not explain, however, why *nuclear* power technology was adopted. Aside from the corruption alluded to above, nuclear power confers prestige upon the regime, fulfilling the aspirations of Filipino technocrats to achieve "modernity" and unifying disaffected sectors of the ruling class behind a symbol of national development.⁵² Nuclear power also provides the Philippines with the technical means for a *long-run* nuclear weapons option, the mere existence of which enhances the regime's standing internally and Marco's standing internationally.⁵³

A more immediate strategic factor favoring nuclear power was the U.S. interest in the Philippines. The U.S. Ambassador to the Philippines underscored the diplomatic importance of the Westinghouse Deal in a confidential cable to the U.S. State Department:

In discussing project [with Westinghouse], I stressed that Embassy considering a great deal of American prestige riding on Westinghouse performance, and therefore we intended to follow project closely. I pointed out that this was in effect Filipino Aswan Dam, being the largest and most expensive project ever undertaken in this country.⁵⁴

In the midst of the negotiations with Marcos on the status and rental of the crucial U.S. bases in the Philippines, the Ambassador was lobbying for soft U.S. Export-Import Bank loans for the nuclear project, reminding the State Department that Marcos is "a close friend, ally, and host of two of our most important military bases."⁵⁵

At the same time the nuclear industry was on the verge of collapsing in the U.S. Involved are the full range of fuel cycle industries, practically all major banks, and an extensive network of subcontractors. Over 1,000 firms in 230 cities in 38 states benefit from a nuclear export.⁵⁶ Fathered by the U.S. State and raised on Government subsidies, the industry has always been influential at the center of power. Nuclear exports have always been seen as a way to reinforce U.S. international political leadership by diffusing technological dependence throughout a global *Pax Atomica*.⁵⁷ Accordingly, the State Department unhesitatingly promoted nuclear exports, initially to establish market beachheads for U.S. vendors, and then to relieve the domestic depression of the industry and to project American strategic power into the region. To this end, the U.S. Export-Import Bank has sunk over \$7 billion as of 1980 to bankroll nuclear exports including over \$600 million to the Philippines.⁵⁸ Little wonder that John Moore, head of Eximbank in 1980, boasted that "Historically, the Export-Import Bank has probably been the nuclear power export industry's best friend in the U.S. government."⁵⁹

V. Popular Resistance

The Westinghouse reactor has become an important target of the anti-Marcos forces, for it crystallizes in a concrete and highly visible project all the perceived worst features of the Marcos regime: corruption, financial waste, misguided priorities, technological dependence, and massive U.S. influence.⁶⁰ Nuclear power has thus become a major target and unifying symbol for the opposition, shaking some key high technocrats into the anti-Marcos camp, dividing the technocrats internally, and creating a new guerrilla front in Bataan for the New People's Army.

Some "Third World" nuclear proponents have invoked "national sovereignty" to defend nuclear power. They argue that the international anti-nuclear movement is the unwitting shocktroop of sophisticated superpowers seeking to preserve atomic hegemony.⁶¹ Yet Marcos' nuclear dream was shattered by the citizens of Morong, Bataan;^b in the words of the Philippines Atomic Energy Commission, "a whole community...[was] roused to take sides against the project" by the insensitive, ham-fisted ramrodding of the project.⁶²

What worries the State Department and the nuclear industry is the rise of an anti-nuclear resistance as part of a movement against U.S. domination and linked to U.S. movements. The Manila-based Coalition for a Nuclear Free Philippines, which grew out of resistance to the reactor, now also demands that the government "Remove all nuclear weapons from our land and dismantle all U.S. military facilities on our soil." "Little by little," they say, "We are learning clearly whose interests the project really serves. By this, we are able to understand deeply that the true nature of nuclearization is as an instrument of imperialims."⁶³

The Philippines Coalition is in turn linked to a Pan-Pacific network, the Nuclear Free and Independent Pacific Movement (NFIPM). The NFIPM stands for democratic national independence throughout the region to achieve a Pacific zone free of all nuclear development, commercial and military. The U.S. State Department has taken note, characterizing the NFIPM as the "biggest potential disruption" to U.S. strategic interests in the Pacific. "The United States government," continued the spokesperson ominously, "must do everything possible to counter this movement."⁶⁴

This anti-imperialist, anti-nuclear political stance was generated out of

b. As a result of intense local and national opposition, Marcos' ambitious plan to install 11 reactors was pared down to two. As of this writing, the first plant—plagued by constant acts of sabotage—is still under construction; the second plant is still but a twinkle in Marcos' eye.

c. The NFIPM is linked to a coalition of US peace/disarmament, environmental, Church and anti-imperialist groups called the US Nuclear Free Pacific Network. The Network spearheads education and organizing work in the US and coordinates US participation in regional NFIP conferences. The Network can be contacted at 942 Market St., #712, /SF CA 94102. Tel: (415) 434-2988.

the conditions of struggle in the Pacific. The struggle continues, most recently in the Philippines with large demonstrations at the reactor site despite the repressive, militarized circumstances.⁶⁵ Their struggle—and their politics—invite a response from the U.S. anti-nuclear movement. As the Coalition for a Nuclear Free Philippines wrote in 1981,

“Our people have drawn lessons from the struggles they have already waged. Though the construction of the plant continues, we have won part of the struggle. Unity and vigilance saw our determination to advance our legitimate cause. Those in a position to put a stop to the project will never do so unless we carry forward with the struggle. Only then can we hope for victory.”⁶⁶

Afterword

The fight against the reactor and other forms of electrification implies that nuclear power and other central domination technologies reflect and embody imperialist domination of the Philippines. It follows that the energy system itself will require radical transformation in a period of socialist transition. In this sense, Lenin's dictum “Communism equals Soviet power plus electrification” does not capture the political realities of the Phillipines context.

Finally, in analyzing the subordination of nuclear technological decision-making to the struggle for class power in a pre-revolutionary period, we did not investigate technological alternatives under continuing capitalist rule; nor did we speculate about technological options in an era of socialist transition in the Philippines. Determining what the Filipino liberation movement can or should do about transforming the energy system was not our object here. We believe that such a transformation is not primarily a technical consideration, independent of the post-revolutionary political struggle for class hegemony. Rather, energy technology choices in a socialist transition will be determined by the need to build the class power of peasants, workers and national minorities in constructing a socialist economy. The technical transformation of the means of production will remain, therefore, an arena of class struggle. This technical transformation has not been “blueprinted” in advance of this struggle, but will presumably be undertaken as the socialist resistance moves to an offensive stage of the liberation struggle.

The technical options to provide energy services—including electricity—are manifold and diverse in the Philippines. But the end-use forms (process and space heat, electricity, mechanical power, etc.) and the social and geographical patterns of energy production and consumption will certainly shift when the Marcos regime finally topples. All that can be said validly at this stage is that nuclear power and electrification in the Philippines embody the domination over the Philipino people by a U.S.-backed dictatorship,

intensify their exploitation, and accentuate the social conflict engulfing that country.

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NOTES

1. See J.E. Katz and O.S. Marwah, footnote 47; and D. Poneman, *Nuclear Power in the Developing World*, Allen and Unwin, UK, 1982.
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3. *Ibid*, chapter 5, pp. 25-29.
4. Commission on Nuclear Reactor Plants, *Inquiry on the Safety to the Public of the Bataan Nuclear Plant*, (mimeo), Manila, 1979.
5. Muih Yat Sun, "Nuclear Plant: The Plague That Poisons Morong, from red graffiti on village walls," (mimeo) Center for the Progress of Peoples, Hong Kong, 1981, p. 5.
6. See Bello *et al*, *op cit*, and our "Atoms for the Poor, Nuclear Power in the Philippines," (mimeo) unpublished, 1979, available from the authors.
7. World Bank, "Philippines Energy Sector Survey," volume 2, Annex 4, Washington DC, 1980, p. 2.
8. See our "Atoms for the Poor," *op cit*.
9. U.S. State Department, "Statement by Louis V. Nosenzo before the Committee on Appropriations Subcommittee on Foreign Operations," (mimeo) Washington DC, February 8, 1978, p. 1.
10. G. Pauker, *ASEAN Energy Plans and Prospects*, RAND report WN-100-98-DOE, 1978, pp 85-6.
11. National Power Corporation, "Power Expansion Program," Manila, 1977, p. 6.
12. World Bank, "The Philippines Country Economic Memorandum," report 1765-PH, 1977, Annex B, p. B-32.
13. G. Makasiar, "Energy for Development of the Philippines," Asia-Pacific Energy Consortium, July 1978, p. 9. and A. Saitzoff, "The Role of the World Bank in Power Development Programs," in *Proceedings of the Regional Seminar on Energy Resources and Electric Power Development*, UNE/CN 11/595, United Nations, New York, 1962, p. 245, which develops investment proportions between generation, transmission, distribution, and end-use equipment.
14. W. Bello, "Development and Dictatorship: Marcos and the World Bank," in W. Bello and S. Rivera, editors, *The Logistics of Repression*, Washington DC, 1977, p. 110.
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16. C. Payer, *The Debt Trap: The International Monetary Fund and the Third World*, New York: Monthly Review Press, 1974, pp. 64-65.
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18. Pacific Asia Resources Center, *Free Trade Zones and the Industrialisation of Asia*, special issue of *AMPO (Japan-Asia Quarterly)*, Tokyo, 1977, pp. 92-100.
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38. See M. Brady, "A Sociological Perspective: Electricity and the Quality of Life in the Philippines," Department of State Airgram, December 21, 1977, p. 7.
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53. The conventional wisdom about the difficulties of producing nuclear weapons clandestinely or with crude and cheap facilities was exploded about 5 years ago. *Nuclear Power: Issues and Choices*, Ballinger Cambridge Massachusetts, 1977, pp. 277-281. For the strategic thinking of the US posture in such a "proliferated world", see J.K. King, *International Political Effects of the Spread of Nuclear Weapons*, Stock # 041-015-00105-1, U.S. Central Intelligence Agency/US Government Printing Office, Washington DC, April 1979. Our textual point here was primarily that the Philippines gains international status *without* exercising the nuclear weapons option. For a case study of India's pursuit of strategic advantage via nuclear ambiguity, see A. Kapur, *India's Nuclear Option, Atomic Diplomacy and Decision-Making*, Praeger New York, 1976, p. 236, and with specific reference to the Philippines, PanHeuristics, *Rivalries and Nuclear Responses, Region of the South China Sea*, volume 3, DNA-001-77-C-0052, Los Angeles, February 28, 1978, pp. III-7-95.

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