25X1

FILE

Central Intelligence Agency

FILE

DATE 9/16/86

DOC NO GI M 86-20212

OIR 3

P&PD 1

25X1

Washington, D.C. 20505

DIRECTORATE OF INTELLIGENCE

10 SEP 1986

MEMORANDUM FOR: See Distribution List

FROM: [redacted] 25X1
Director, Office of Global Issues

SUBJECT: Philippine Electricity Shortages [redacted] 25X1

I would like to call the attached report to your attention. Prepared by members of my staff, this report assesses the potential for electrical power shortages on the principal Philippine island of Luzon through the early 1990s. In our view, serious shortages of electricity during the dry season, caused by equipment failures and the mothballing of the Bataan nuclear power plant will constrain economic recovery and hurt US and Filipino businesses in Manila. The situation will probably not improve until the early 1990s, after new plants are built and existing plants renovated. Financing the more than $1 billion construction and renovation cost will be difficult, and we believe the Aquino administration will be tempted to accept recent offers of Soviet financial and construction assistance unless viable alternative offers are made by the West. If you or members of your staff have questions concerning this report, please call [redacted] Chief, Geography Division [redacted] 25X1

[redacted] 25X1

Attachment:
The Philippines: Electricity Shortages Looming [redacted] 25X1
GI M 86-20212, September 1986,

[redacted] 25X1

[redacted] 25X1

 25X1

Central Intelligence Agency

Washington, D.C. 20505

DIRECTORATE OF INTELLIGENCE

10 September 1986

The Philippines: Electricity Shortages Looming

Summary

Electric power shortages on the Philippine island of Luzon are emerging as a serious constraint to any economic recovery. The Aquino administration's decision to mothball the nearly-completed Bataan nuclear power plant has left a gap in planned electrical capacity that will take at least five years to fill, even if plans for other new plants are implemented quickly. Moreover, the government-owned National Power Corporation (NPC)--the national producer and distributor of power to local powers systems-and the Philippine goverment itself, already saddled with more than $1.5 billion in debts from the Bataan plant, will be hard-pressed to pay the more than $1 billion cost of new plants and renovations. Under these circumstances, Soviet offers of financial and construction assistance will present a strong temptation to the Aquino government. Meanwhile, periodic brownouts and blackouts are likely to worsen--particularly in the winter-spring dry season--until the new plants come on line. 25X1

This memorandum was prepared by [redacted] Eurasia Branch, Geography Division, Office of Global Issues. The information contained herein is updated to 5 September 1986. Comments may be directed to [redacted] Chief, Geography Division [redacted] 25X1 25X1

25X1

GI M 86-20212

[redacted] 25X1

[redacted] 25X1

 25X1

SUBJECT: The Philippines: Electricity Shortages Looming [redacted] 25X1

OGI/GD/ERA [redacted] (10Sept86) 25X1

Distribution:

Original - See Distribution (External)
1 - John C. Monjo, State
1 - Clark Ellis, State
1 - Ann Hollick, State
1 - Charles Salmon, State
1 - Allen Kitchens, State
1 - Dr. Jack Sheerin, State
1 - John Finney, State
1 - M. Peter McPherson, USAID
1 - William Nance, USAID
1 - Jack Vanderryn, USAID
1 - James Conrow, Treasury
1 - Douglas P. Mulholland, Treasury
1 - Steven Canner, Treasury
1 - William McFadden, Treasury
1 - Robert Price, DOE
1 - Charles V. Boykin, DOE
1 - Melvin W. Searls, Commerce
1 - James P. Moore, Commerce
1 - Bryon Jackson, Commerce
1 - William Brown, Commerce
1 - George Paine, Commerce
1 - Henry Misico, Commerce
1 - Warren Moskowitz, Federal Reserve Bank of NY
1 - Russel Price, US Export-Import Bank
1 - Ray Albright, US Export-Import Bank
1 - Gerald West, OPIC
1 - Robert Draggon, OPIC
1 - Peter Allgeier, Assistant US Trade Representative
1 - Harvey Bale, Assistant US Trade Representative
1 - Alexander H. Platt, NSC
1 - Karl Jackson, Defense
1 - Robert Emery, Federal Reserve Board

1 - SA/DDCI (Internal)
1 - Executive Director
1 - DDI
1 - DDI/PES
1 - NIO/East Asia
1 - CPAS/ISS
1 - D/OGI, DD/OGI
1 - OGI/PG/Ch
8 - OGI/PG
1 - Ch/OGI/GD
1 - DCh/OGI/GD
1 - Ch/OGI/GD/ERA

[redacted] 25X1

The Philippines: Electricity Shortages Looming

Luzon's Electrical Woes

Brownouts and blackouts are once again plaguing users of electricity on Luzon--the northern Philippine island where more than 90 percent of the country's non-agricultural production takes place and 75 percent of the nation's electricity is consumed. Brownouts were a serious problem in the early 1980s until the economic downturn lowered demand for electricity. According to US Embassy and press reporting, the recent shortages began in mid-June and probably contributed to a blackout on 21 August that plunged some 90 percent of the island's residents into darkness for several hours. Although the onset of monsoonal rains is increasing hydropower production and decreasing the frequency of brownouts, the US Embassy reports that businessmen remain very concerned about the power situation. Officials of the American Chamber of Commerce report that many companies have experienced losses from production shutdowns and equipment damage, and they believe the situation will worsen when the long-expected economic recovery increases the demand for electricity. According to the US Embassy, the business community in Manila cites high power costs--by far the highest in non-communist East Asia (TABLE 1)--and looming shortages as two reasons why it is not investing as much as expected and adopting a wait-and-see attitude. The Embassy reports that should progress be made in resolving labor disputes and calming the troubled political situation, electricity shortages will move into the foreground as the major concern of businessmen. 25X1

Luzon's electrical problems may also act to increase Manila's ties with Moscow. According to the US Embassy, the Soviets recently offered to construct two coal-fired power plants on Luzon, a proposal endorsed by Manila's ambassador to Moscow as a means of strengthening Philippine-Soviet economic ties. According to the Philippine press, a senior energy official will travel to the USSR and Austria late this year to discuss financing and constructing one coal-fired plant. 25X1

The Luzon electrical supply looks good on paper. Peak demand--2,300 megawatts (MW)--is only 56 percent of installed capacity--4,100 MW. The total dependable capacity, however, is much lower. According to the US Embassy, equipment failures have reduced the dependable capacity of Luzon's 10 oil-fired plants by a total of about 500 MW. Dry season conditions--lasting from roughly December through June--cause a loss of another 500 MW in hydropower as reservoirs are drawn down. A private sector source of the US Embassy estimates that weather, maintenance, and other problems altogether cause a drop in the total dependable capacity to 2,363 MW in the dry season and 3,042 MW in the rainy season. Under such conditions the dry season capacity is barely adequate for meeting existing demand. According to the low growth scenario of the National Power Corporation (NPC)--the government-

25X1

[redacted] 25X1

owned producer and distributor of power to local power systems--demand will increase to more than 2,750 MW by 1990 (TABLE 2), resulting in a serious dry season electrical shortfall even in the unlikely event--given years of deferred maintenance--that all existing plants will be able to maintain current production levels. Our own estimate suggests an even greater shortfall.

[redacted] 25X1

The Bataan Nuclear Plant

Much of the projected shortfall in electrical capacity over the next several years can be attributed to the Aquino administration's decision to mothball the nearly completed Bataan nuclear power plant, which would have satisfied Luzon's needs into the early 1990s. The May 1986 cabinet decision followed months of internal debate. Senior NPC officials advised the President in April that the plant should be completed, and Mrs. Aquino distanced herself from an earlier campaign pledge not to operate the plant. The final decision came in light of the Chernobyl disaster--and apparently from the advice of a presidential assistant that mothballing would not jeopardize Manila's legal actions against Westinghouse, the plant's contractor, for alleged overbilling and fraudulent encashment of a Japanese letter of credit. [redacted] 25X1

We believe that the decision to mothball the Bataan plant is not likely to be reversed for at least the next few years. Reviving the plant would be politically very costly given the massive public opposition to it--in part a product of years of propaganda attacks by leftist groups. Moreover, security would be a major problem; 18 of the plant's transmission towers have been toppled by communist insurgents and criminal groups over the past few years. [redacted] 25X1

In addition to delaying expansion of Luzon's electrical capacity, the debt from the Bataan plant constrains Manila's ability to solve the power problem. According to [redacted] 25X1
[redacted] press reporting, the debt totals more than $1.5 billion, 25X1
mostly from foreign loans, including a reported $644.4 million from the US Export-Import Bank. The Philippine government relieved the NPC of its foreign obligations on the plant on 13 August, according to the US Embassy. Manila hopes to trim the massive debt servicing costs--currently $114 million per year and scheduled to rise to an average of $240 million annually between 1987 and 1993--through its legal actions against Westinghouse and against former members of the Marcos administration. [redacted] 25X1
Manila is also considering a separate rescheduling of loans for the nuclear

[redacted] 25X1

25X1

plant, according to the US Embassy. According to late August 1986 press reporting, the NPC has suspended payments to Westinghouse and the plant's insurance carriers. 25X1

Officials Overly Optimistic

Philippine energy officials discount reports of impending electrical shortages. According to the US Embassy, the president of the NPC insists that the present system can handle increased demand until new plants come on line and that any shortfalls could be made up by using emergency gas turbines. In an August 1986 meeting 25X1 the cabinet has approved NPC's plan to add 400 MW to the Luzon grid by 1991 or 1992. A 300 MW coal-fired plant will be built--possibly with Soviet assistance--near Batangas, south of Manila, and the other 100 MW will come from expanding Luzon's geothermal capacity. In the meantime, the NPC will rehabilitate four oil-fired plants.

25X1

We question the Philippine optimism. They 25X1 do not take into account the fact that existing plants will have to be shut down or slowed because of equipment failures. Short-term use of gas turbines to reduce power shortages is technically 25X1 feasible but is extremely expensive The plans for upgrading the Luzon electrical grid by 25X1 adding new plants and renovating existing ones will take several years to complete--even if implemented quickly--and we believe such plans will require enormous expenditures that the NPC and Philippine government will find difficult to pay:

- According to the US Embassy, all 10 existing oil-fired plants need rehabiliation at a total cost of roughly $1 billion. We believe rehabilitation will require each plant to be taken off line for at least several months, reducing the dependable capacity by an average of 150 MW for each plant. Thus no net power gains can be expected until several plants have been renovated.

- The planned coal-fired plant near Batangas would cost at least $250 million, according to the US Embassy, and, 25X1 will not be ready until at 25X1 least the early 1990s.

- Expansion of geothermal capacity is unlikely, according to the US Embassy, until the NPC pays the $85 million it owes UNOCAL, the company that operates Luzon's two geothermal fields.

- The NPC faces massive financial problems, largely due to mounting debts of local power cooperatives. According to the US Embassy, NPC accounts receivable totalled about $270 million in 1985. Manila Electric Company (MERALCO) alone owes $175 million. In Manila, "social pricing" policies

25X1

used by the Marcos administration and continued by the present government have resulted in a current rate of less than $.02 per kilowatt hour (kwh) for the first 130 monthly kwh consumed--enough for most small residential consumers. This produces a revenue loss that MERALCO cannot make up with its sharply higher rates for large consumers. Additional NPC losses have stemmed from widespread meter tampering and from the tendency of many residents in recently electrified rural areas to ignore electric bills because they believe electricity to be a gift from the government.

- Although the Philippine government has relieved the NPC of its $300,000 daily interest payment on the Bataan plant, the US Embassy reports that the corporation remains in a poor position to make the expenditures needed to maintain and renovate the system.

Outlook

Dry season brownouts and blackouts on Luzon will likely increase until the island's dependable electrical capacity expands--probably not until the early 1990s. The long lead time required to plan and construct any large power plant means that even if financing is found--increasing the government's already large debt burden--it will be at least 1990 before new plants come on line. Renovation of some existing plants can occur before then, but this alternative is also subject to financing problems and would require lengthy plant shutdowns. Equipment failures are likely to cause additional capacity reductions over the next several years, which would increase shortages even if demand remained constant.

With the Bataan plant out of the picture, Manila's alternatives for reducing electric power shortfalls in the next few years will be of limited effectiveness:

- Raising rates for small consumers and enforcing payment of electric bills are necessary steps if the NPC is to regain financial solvency, but both would likely arouse political opposition. Moreover, neither measure is likely to forestall electrical shortages in the short-term, and both could promote additional meter tampering.

- Publicity campaigns to encourage electricity conservation, especially during dry season peak hours, are a viable option, but will probably not shrink demand enough to close the gap.

- If the NPC and local companies can regulate the timing of brownouts and provide users with sufficient warning, many industrial users would be able to work around power shortages. MERALCO has had only limited success with its current warning system; US businessmen in Manila report

25X1

that the warnings are often wrong and that most brownouts occur without warning.

25X1

We believe that Luzon's electric power problems will act as a brake on Philippine economic recovery as existing industries are unable to operate full-time and as local and foreign investors hesitate to increase their electrical requirements until a stable supply is assured. To the extent that the economy starts expanding next year, as widely predicted, and barring viable offers of assistance from the West, pressure on the government to find solutions to the energy problem could increase dramatically, opening the door to Soviet overtures and adding to the political troubles of the Aquino administration.

25X1

25X1

25X1

TABLE 1.

East Asian Electrical Power Cost Comparison

Location	Nominal Power Cost (cents per kilowatt hour) for large consumers	Index
Manila	11.54	100.0
Tokyo	7.33	67.3
Jakarta	6.59	60.5
Hong Kong	6.57	60.3
Singapore	6.46	59.3
Korea	5.94	54.5
Bangkok	5.78	53.1
Taiwan	5.48	50.3

25X1

25X1

25X1

[redacted] 25X1

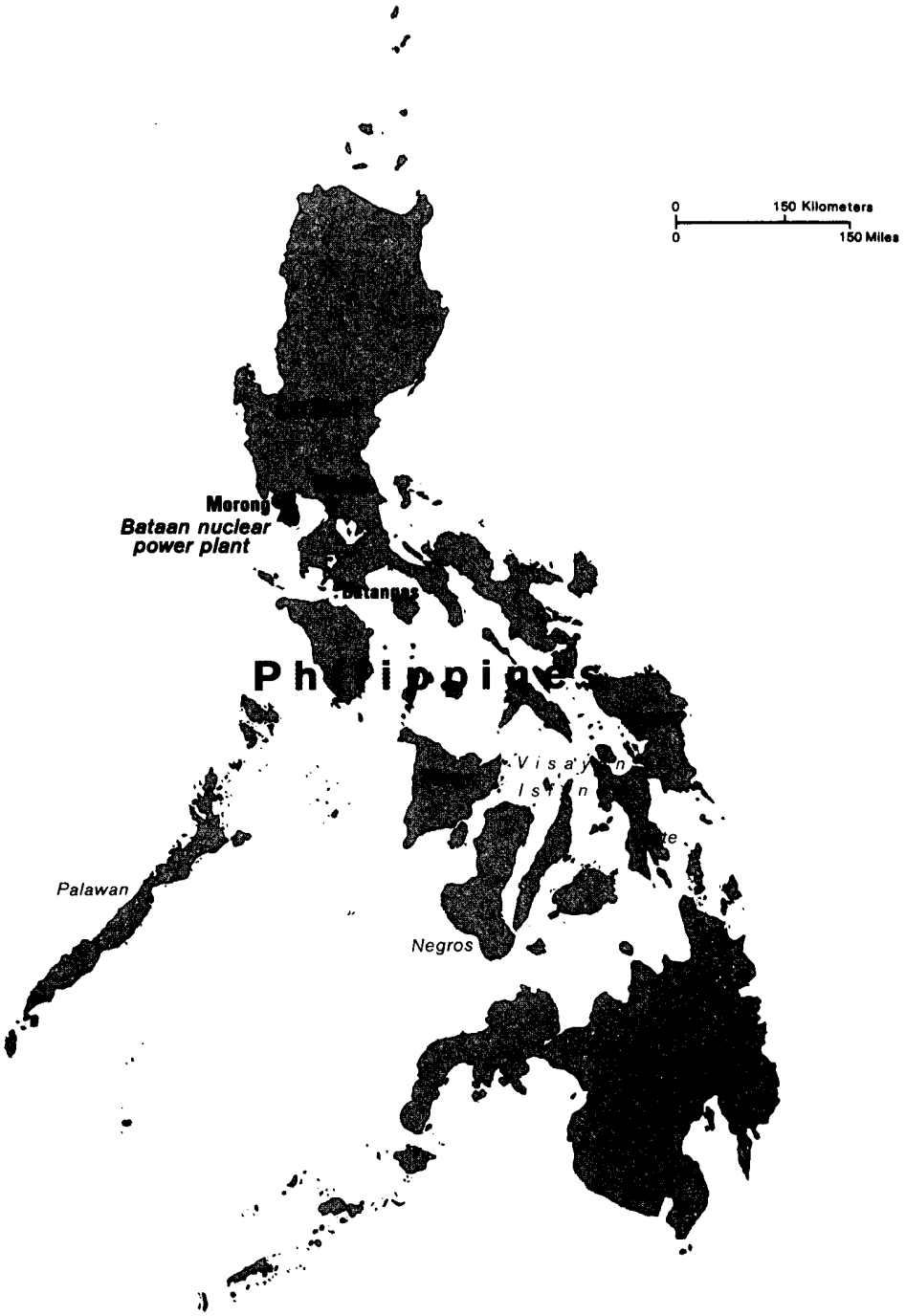
TABLE 2.

Luzon Grid Demand Projections: Alternative Scenarios

	1986	1987	1988	1989	1990	1991
NPC low GNP growth rate scenario (pct.)	1.0	2.0	4.0	5.0	6.0	6.0
Demand with low economic growth (MW)	2,335	2,382	2,477	2,601	2,757	2,923
NPC high GNP growth rate scenario (pct.)	2.0	4.0	6.0	6.0	6.0	6.0
Demand with high economic growth (MW)	2,358	2,452	2,599	2,755	2,920	3,096
CIA GNP growth rate scenario (pct.)*	1.6	5.8	4.0	4.0	4.0	4.0
Demand with CIA growth scenario (MW)	2,350	2,500	2,605	2,710	2,820	2,930
Dry season shortfall given industry estimate of 2363 MW dependable capacity and CIA growth scenario (MW)	(13)	137	242	347	452	557

*Note: Our econometric model suggests a GNP growth rate of 1.6 percent this year and almost 6 percent in 1987, but the rate will probably fall to less than 5 percent beyond 1987 unless major reforms are made [redacted] 25X1

[redacted] 25X1



708490 (A02387) 9-86

25X1