

**September 8, 1986**  
**Memorandum by Director of Global Issues,**  
**'President Sarney and Brazil's Nuclear Policy'**

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**Summary:**

This is a CIA assessment of Brazilian nuclear politics a few weeks before President Sarney's visit to the U.S.

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MEMORANDUM FOR: See Distribution

FROM: [redacted] Director of Global Issues 25X1

SUBJECT: President Sarney and Brazil's Nuclear Policy [redacted] 25X1

1. In anticipation of President Sarney's visit to Washington, the attached memorandum reviews Sarney's handling of nuclear matters. The analysis is based on a research effort that will culminate in the near future in a full scope assessment of Brazil's nuclear decisionmaking establishment. [redacted] 25X1

2. If you have comments or questions, or if you desire a briefing on this issue, please contact [redacted] Chief, International Security Issues Division, [redacted] 25X1  
[redacted] 25X1

[redacted] 25X1

Attachment: President Sarney and Brazil's Nuclear Policy 25X1  
GI M 86-20209 September 1986

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SUBJECT: President Sarney and Brazil's Nuclear Policy 

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Washington, D.C. 20505

DIRECTORATE OF INTELLIGENCE

8 September 1986

President Sarney and Brazil's Nuclear Policy

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Summary

During the year or so that President Sarney and his civilian government has been in power, Sarney has not altered existing nuclear development priorities. Sarney does not appear to question specific projects set in place before his arrival and has made no moves to fundamentally revamp the nuclear bureaucracy or replace key nuclear officials. Basic policy lines--the continued deemphasis of the safeguarded power program and aggressive pursuit of indigenous, unsafeguarded sensitive technologies--are well set and enjoy widespread support. The nuclear bureaucracy charged with setting policy guidelines and carrying out specific projects is well staffed and committed to the existing priorities. With the further cutback of the costly power program, still more resources may be freed for the unsafeguarded program. Sarney's private views on whether Brazil ultimately should produce a nuclear device or even a weapon are not known. He likely will avoid actions or statements that could be construed as contributing to that capability, even though he tacitly may approve of Brazil's sensitive nuclear programs.

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This memorandum was prepared by [redacted] Nuclear Proliferation Branch, Office of Global Issues. Information available as of 4 September 1986 was used in its preparation. Comments and queries are welcome and may be directed to the Chief, International Security Issues Division, [redacted]

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## President Sarney and Brazil's Nuclear Policy

### Continuity in Nuclear Priorities

President Sarney, the first civilian president since 1964, has shown no inclination to alter the basic nuclear priorities that have been evolving for several years. Thus, we expect to see continued shifting of resources from the once preeminent, safeguarded power program to the unsafeguarded, and largely military-led effort to master sensitive technology. [redacted]

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The President does not appear to approach nuclear decisionmaking much differently from his military predecessors, nor does he appear to question specific nuclear programs put in place before his arrival. We believe that Sarney probably has knowledge of, and may have tacitly approved continuation of, sensitive efforts in the uranium enrichment and reprocessing fields. Despite the advent of civilian government, the major policymaking figures remain the same, and the nuclear decision-making environment has not been significantly altered. Sarney pointedly retained the head of the National Nuclear Energy Commission (CNEN)--largely responsible for shaping recent nuclear efforts--and, we believe, continues to support him. [redacted]

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At the same time, Sarney has, in undramatic ways, put his own stamp on some nuclear issues. Early in his tenure Sarney appointed a special commission to examine all of Brazil's nuclear efforts and recommend ways to streamline them, [redacted]

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[redacted] With regard to the power program, Sarney probably will implement recommendations that call for further money-saving cuts in subsidiaries of NUCLEBRAS, the state enterprise created to run the safeguarded power program.

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### The Political Backdrop

Throughout the military regime's tenure and thus far in the year and a half since civilian rule was restored, Brasilia's effort to become self-sufficient in nuclear matters has not been constrained by internal political factors or public opinion. We do not expect this to change, since most Brazilians are largely indifferent toward nuclear policy. "Nuclear Politics," to the extent that it exists at all outside government and military nuclear entities, is limited to occasional press commentaries and complaints from well-known critics within the scientific community. Brazilians of all strata, however, are highly nationalistic and largely share a conviction that their country should--and can--master various modern technologies on the way to

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building its status in the world. Thus, we judge that there is at least implicit, widespread support for Brazil to pursue mastery of nuclear technology. [redacted]

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Public opinion has not, in our view, been widely aroused even by the disaster in Chernobyl. [redacted]

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[redacted] the disaster has provoked only limited concern about nuclear plant safety in Rio de Janerio. In early August the Brazilian press began a series of exposes on alleged nuclear weapons testing facilities in remote Para state. While the stories provoked a momentary flurry of activity by the government, including formal denials by the president and top military officials, raising some public and international interest, the issue appears to have subsided in recent weeks. The issue has raised some public speculation, however, that current Brazilian-Argentine nuclear talks could be adversely affected. [redacted]

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### The Nuclear Establishment

Brazil has a large and complex nuclear establishment embracing no fewer than seven civilian and military entities, guiding or coordinating policy as well as actually implementing research programs. (see figure 1.) Two high level entities--the Nuclear Energy Commission (CNEN) and the National Security Council--have major roles in setting broad nuclear goals and strategies, and allocating resources. Separate research efforts, with some overlap, involve civilian entities and all three military services. While there is considerable cooperation across programs including shared facilities, we believe there is also competition for funding and technical preeminence. [redacted]

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### Guiding Policy

CNEN, part of the Executive Branch, generally serves as coordinator and monitor of sensitive technological projects and is the Federal licensing and regulation authority. A civilian entity nominally under the Mines and Energy Ministry, its policy coordination function encompasses both civilian and military-sponsored programs. CNEN influence is, we believe, directly related to the personal impact of Dr. Rex Nazare Alves, its head. [redacted]

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Dr. Rex, [redacted] is a respected nuclear specialist who is generally regarded by Brazilians as the leading advocate of Brazil's indigenous mastery of the fuel cycle free of international safeguards. A former adviser to the Brazilian National Security Council, Rex has good ties to both the military and civilian sectors. [redacted]

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[redacted] We believe Rex is likely to retain his influence for some time. His nationalist stance accords well [redacted]

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with Brazilians' general convictions that, in many areas, their country must pursue technological progress unimpeded. Under his tutelage the indigenous efforts have progressed technically and, in fact, grown. [redacted]

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Just as it does in other policy areas, the National Security Council brings together, at the highest level, all major governmental entities with a stake in nuclear matters: key personnel of top presidential staffs, military and other ministers, and others as required. We believe the Security Council may in fact have the potential to function as the "arbiter" of the direction of the nuclear program. [redacted]

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The Security Council has backed the nuclear program politically and financially. [redacted]

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[redacted]

Implementing Programs

Prior to Sarney's administration the nuclear power program has been drastically scaled back, owing to its huge cost, exaggerated projections of power needs, and the limitations placed both by safeguards and by the West Germans, with whom the Brazilians contracted in 1975. From the outset, the safeguarded power program was centered in NUCLEBRAS, set up to direct research, technology transfer, and power plant construction/operation. The budget for NUCLEBRAS--once a powerful, largely autonomous operation--has been slashed, its power projects have been cancelled or postponed, and NUCLEBRAS directors have lost influence. It is still responsible, however, for completion of the Angra-II and ANGRA-III power reactors and for safeguarded fuel cycle research.

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During the 1980s the focus of nuclear activity has shifted to the organizations comprising the unsafeguarded program. The Institute for Energy and Nuclear Research (IPEN), in Sao Paulo, was the first center for unsafeguarded research, with ongoing projects in uranium enrichment and suspected experiments in reprocessing. In recent years the navy has utilized IPEN for its

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classified work on naval nuclear propulsion. IPEN is headed by Dr. Claudio Rodrigues

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Physically housed within IPEN, the Navy's Coordinating Center for Special Projects (COPESP), is focused on centrifuge enrichment and development of a propulsion reactor for an eventual nuclear submarine. [redacted] the National Security Council announced early this year that it will back a possible \$600 million investment in advanced centrifuges to be developed by COPESP, but probably at a new facility at Sorocaba. [redacted] Navy Captain Othon Luiz Pinheiro, COPESP head, is slated for promotion to flag rank and that COPESP will be upgraded to an independent naval command. This would ensure Othon's parity with flag rank army and air force nuclear research directors. [redacted]

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Headed by veteran scientist General Hugo Piva, the Air Force Aerospace Technical Center (CTA) houses the Space Activities Institute--instrumental in space vehicle and missile technology--and the Advanced Studies Institute, which has sophisticated research capabilities. CTA, with efforts in physics, nuclear energy, laser development and advanced computer science, has made some progress in laser isotope uranium enrichment and composite materials for gas centrifuges. We believe there are funding and data processing links between CTA and navy programs. [redacted]

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At the Army Technical Center (CTEX), an army research group is planning a graphite-moderated reactor that would be a significant plutonium producer, [redacted] Other army research groups are engaged in technological support activities which we believe give the army the potential ultimately to construct both the reactor and the reprocessing plant that would be needed to recover the plutonium. [redacted]

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### Prospects

The basic lines of Brazil's nuclear policy and research are, we believe, well set and unlikely to change drastically. The scaled down NUCLEBRAS structure and attention to advancing indigenous research will continue to characterize the nuclear program. We believe that the widely-expected further downgrading of NUCLEBRAS will likely free some financing and technical personnel to be added to the indigenous research program. The further decline of NUCLEBRAS and consequent solidifying of indigenous efforts could contribute, in our view, to the consolidation of CNEN's role as the principal nuclear policy body. [redacted]

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Thus far, nuclear decisionmaking has been relatively easy

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for the Brazilians. Moving to downgrade the power accord with West Germany was virtually required, given its enormous costs. Closing ranks around indigenous, unsafeguarded research was, in a sense, almost inevitable. Its cost, compared to the West German deal, was low and no Brazilian could credibly argue against technological mastery free of international "strings." [redacted]

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Having taken this road, the Brazilians will face decisions in the near future which will affect further progress and which likely will prove more difficult than decisions to date. For example, the Brazilians are working on uranium enrichment via laser isotope separation and ultracentrifuge. The navy, which sponsors centrifuge enrichment, will likely fight any eventual decision to go with laser isotope separation sponsored by the air force. The reverse would be true if the decision--and related funding determinations--favors the air force. The army for its part is planning for a graphite moderated reactor which would require an expensive reprocessing plant. All these decisions, in our view, could prove difficult both because they would involve much higher levels of spending and because a given spending upgrade would confer on one of the armed services a clear superiority in one or more areas that none of the military services will wish to concede. Alternatively Brasilia could strive to preserve for each of the services comparative equity in resources--and this could ensure multiple routes to enriched uranium and plutonium. [redacted]

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Clearly the Brazilians are pushing toward the technical threshold at which they will have achieved the capability to produce fissile material in quantity. We have no indication that a political decision on the nuclear explosive option has been made nor any current outward indication that this is officially under discussion. However, we suspect that some top military and CNEN officials clearly are linking sensitive research to potential development of a nuclear weapons capability. As Brazil approaches that technological threshold, an explosive and weapons option becomes real, not just theoretical. [redacted]

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While he may at least tacitly approve Brazil's indigenous nuclear research and development efforts, President Sarney appears to be maintaining a cautious distance from overt political decisions directly affecting these programs. Although publicly Sarney has repudiated a nuclear weapons option for Brazil, [redacted]

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[redacted] We believe, however, that if such pressure should develop during the remaining years of his presidency, Sarney's views will count significantly, and he will be well positioned to lead that policy process. [redacted] he has long-standing, good rapport with the military and, we judge, is gaining still greater political stature through his overall handling of the presidency. His handling of nuclear matters to date has been low-key, an approach that we believe has tended to reassure civilians and military men alike. [redacted]

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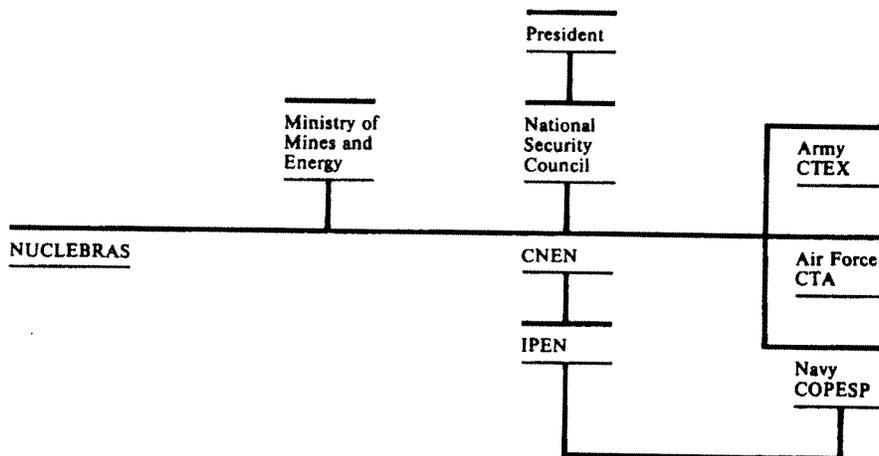
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**Brazil: Nuclear Organization**

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