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5 DEC 1983

MEMORANDUM FOR: (See Addressee List)

FROM: [redacted]
Director of Global Issues

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SUBJECT: Implications of Argentina's Uranium Enrichment
Capability [redacted]

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1. The attached memorandum examines the implications of Argentina's surprise announcement that it has successfully operated a facility to enrich uranium. Buenos Aires claims that this development--the latest in a series of Argentine efforts to circumvent comprehensive nuclear safeguards--will help the country achieve greater independence in the area of nuclear energy. However, the existence of an unsafeguarded enrichment facility will deepen suspicions about potential military applications of Argentina's nuclear program and impact negatively on Buenos Aires's relations with major nuclear supplier states.

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2. This memorandum was prepared by [redacted]
[redacted] International Security Issues Division, Office of
Global Issues. [redacted]

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3. Comments and queries regarding this subject are welcome and may be addressed to the Chief, Weapons Proliferation Branch, OGI, [redacted]

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[redacted]

Attachment:
The Implications of Argentina's Uranium Enrichment
Capability GI M 83-10274, December 1983 [redacted]

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GI M 83-10274

[redacted]

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Central Intelligence Agency



Washington, D.C. 20505

DIRECTORATE OF INTELLIGENCE

2 December 1983

Implications of Argentina's Uranium Enrichment Capability

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Summary

Argentina's sudden mid-November public announcement of a breakthrough in uranium enrichment technology has increased speculation about the potential military applications of Argentina's nuclear research efforts. The new regime--which was apparently surprised by the announcement--probably will not open the enrichment facility to international safeguards inspections. An unsafeguarded enrichment facility would make it more difficult to monitor possible Argentine weapons-related activities and would damage Argentine relations with major nuclear suppliers. Furthermore, some military officials in Brazil and Chile already have suggested that their governments intensify nuclear research outside safeguards for national security reasons.

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The Announcement

The head of Argentina's Atomic Energy Commission, Retired Admiral Carlos Castro Madero, announced on 18 November that his country has successfully operated a pilot-scale gaseous diffusion

This memorandum was prepared by [redacted] International Security Issues Division, Office of Global Issues. This analysis is based on information as of 2 December 1983. Comments and queries are welcome and may be addressed to Chief, Weapons Proliferation Branch, OGI, [redacted]

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facility. According to Castro Madero, the present facility is the "first module" of a larger uranium enrichment plant that when complete will be capable of enriching about 500 kilograms of uranium a year to the 20 percent level. This larger plant is reportedly in the "advanced stages" of construction and is scheduled to be completed by the end of 1985. Both facilities are located near Bariloche, about 1,000 miles southwest of Buenos Aires. The Argentines showed the pilot-scale enrichment facility to IAEA Director General Hans Blix on 24 November. [redacted]

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Castro Madero publicly justified the decision to launch research in uranium enrichment technology as a legitimate reaction to the Carter administration's decision in 1978 to terminate the supply of US-origin enriched uranium for use in Argentina's five small light-water research reactors. Argentina's refusal to accept safeguards administered by the International Atomic Energy Agency (IAEA) on all Argentine nuclear activities was the principal reason why Washington chose to terminate nuclear relations with Buenos Aires. [redacted]

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The Argentines claim that the uranium enrichment development program will provide a reliable source of enriched uranium for their small research reactors. Furthermore, they maintain it will enable Buenos Aires to be a reliable supplier of enriched uranium to its own nuclear customers in Latin America, particularly Peru which has purchased a small research reactor from Argentina. In his announcement, Castro Madero also emphasized that Argentina plans to utilize some low-enriched uranium (probably at the one percent level) in the country's two operational natural uranium reactors, a move that would increase fuel efficiency. [redacted]

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Argentina's Intentions

Castro Madero's sudden announcement of this sensitive and difficult achievement was made without any previous indication that Buenos Aires was seriously considering construction of a gaseous diffusion facility. However, Buenos Aires has for many years made clear its intention to obtain a complete nuclear fuel cycle outside IAEA safeguards. This new development is in keeping with this objective even though, thus far, Argentina's nuclear energy program has been largely centered on the heavy-water nuclear fuel cycle which uses natural uranium rather than enriched uranium. [redacted]

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The announcement, which apparently took the newly elected civilian regime by surprise, was made by the Argentine Foreign Ministry with the approval of the outgoing military government. We believe that the timing of Castro Madero's announcement was influenced by the desire of senior Argentine nuclear officials to influence the new government on the importance of nuclear research and the need to maintain a well-funded nuclear energy

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program. The President-elect, Raul Alfonsin, who will take office on 10 December, had campaigned in opposition to nuclear weapons research and his advisors have stated that nuclear energy in the future will be given a lower priority. [redacted]

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We cannot independently confirm Argentina's capability to enrich uranium, but their claim to have enriched some uranium through the gaseous diffusion process probably is accurate. A visit by IAEA Director General Hans Blix on 24 November confirmed the existence of a pilot-scale enrichment facility, and it would have served little purpose for Castro Madero to prematurely unveil Argentina's enrichment capability. However, the projected completion of the larger facility in 1985 may be overly optimistic because of financial and possible technical constraints. [redacted]

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The Argentine achievement underscores Buenos Aires's determination to master both routes--uranium enrichment and plutonium separation--to fissile material production. Most other countries that have posed a proliferation threat have pursued only one route to fissile material acquisition. Generally the plutonium route is chosen because it technically is easier and less costly to accomplish. India and Israel are the best examples of countries that have used the plutonium route to complete the nuclear fuel cycle for possible military use. Pakistan, which has a strong desire to acquire a nuclear capability, is the only other developing country known to have made a serious effort to build both uranium enrichment and plutonium reprocessing facilities. [redacted]

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The Argentine and Pakistani cases are also similar in that both countries managed to keep secret their efforts to acquire enrichment technology for an extended period of time. In Pakistan's case, centrifuge enrichment technology was obtained illegally from Western Europe's uranium enrichment consortium, URENCO, in the mid-1970s. We do not know how Argentina developed or acquired gaseous diffusion technology. The Argentines claim that this has been an exclusively national achievement, although public remarks by Castro Madero indicate that Argentina imported at least some components and equipment for the enrichment facility. [redacted]

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Proliferation Impact

The Argentine breakthrough in this sensitive area of nuclear science makes the proliferation threat substantially more serious than before. Technically, the obstacles to the production of weapons-grade fissile material (i.e. uranium enriched to the 80-90 percent level) are substantially overcome if a country can enrich uranium to the 20 percent level. Further enrichment to a weapons-grade level then becomes a political decision rather than a technical problem. [redacted]

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The Brazilian Government was given advance notification and subsequently issued public congratulations to the Argentines for their achievement, but we expect the Argentine announcement will heighten concern among Brazilian officials and those from other neighboring Latin American countries--particularly Chile. Some Brazilian and Chilean officials have expressed publicly in the past the belief that the Argentine nuclear energy program might eventually move toward weapons-related research. Those individuals in the military and nuclear establishments in Brazil and Chile most suspicious of Argentine intentions have advanced stronger arguments to support their own interest in conducting nuclear research outside IAEA safeguards, according to US Embassy reporting. Like Argentina, neither country has signed the Nuclear Non-Proliferation Treaty (NPT) and, as a result, has reserved the legal basis for justifying indigenous nuclear activities free of international inspection. [redacted]

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Other states of proliferation concern such as Pakistan and South Africa will probably draw considerable encouragement from Argentina's ability to develop the most sensitive nuclear technology with minimal or no outside assistance. Some, like Libya, may even hope that Argentina will share the secrets of its enrichment technology. Others such as Taiwan and South Korea might assert that they should not be restricted by the United States from advanced nuclear research in view of the Argentine announcement. [redacted]

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Prospects

The new civilian Argentine Government under Raul Alfonsin will find it difficult to balance its conflicting domestic and foreign policy interests resulting from Castro Madero's unexpected revelation. The Argentine press has praised the achievement of the country's scientific elite, but the Alfonsin government, in view of its stated opposition to nuclear weapons research, will probably be both unwilling and unable to ignore negative foreign reactions. [redacted]

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We expect the new civilian Argentine Government to attempt to gain greater control over the direction of the nuclear program and perhaps put it on a tighter budget. However, according to several press reports, the Alfonsin government does not intend to open the new enrichment facility to IAEA safeguards inspection. Acceptance of international inspections at indigenous nuclear facilities would signify a radical departure from all previous Argentine policy statements on this issue. Thus far, Buenos Aires's position has been that IAEA safeguards are only acceptable in cases where there has been an actual transfer of nuclear materials, equipment, or technology to Argentina. [redacted]

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Argentine nuclear officials will probably try to counter foreign criticism by emphasizing that IAEA safeguards for uranium

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enrichment facilities are still in the developmental stage. Furthermore, even if such safeguards were available today, the Argentines probably would reject them on the grounds that inspections would compromise a major commercial secret--a position which has often been advanced by West European countries and Japan to protect their own versions of uranium enrichment technology. As long as the new enrichment facility remains outside safeguards, the ability of the IAEA to provide any timely warning of weapons-related activities which may take place in Argentina is seriously jeopardized.

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Argentina's relations with nuclear supplier states will be severely complicated though Castro Madero presumably took this into account when he decided to reveal Argentina's unsafeguarded enrichment facility. The Argentine Government may find it difficult, if not impossible, to have any future nuclear cooperation with Canada and the United States since each requires, as a matter of policy or law, that their customers accept comprehensive safeguards.

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Buenos Aires may believe that West Germany--which is constructing Argentina's third nuclear power reactor, Atucha II--will likely prove to be more flexible than Canada or the United States concerning future nuclear cooperation. Bonn rationalized its decision in 1980 to proceed with the Atucha II project, in the face of US criticism, on the grounds that Argentina had all of its operational nuclear facilities under IAEA safeguards. Although this situation is no longer the case, Bonn still has a fallback position. In terms of its legal commitments under the NPT and its membership in suppliers organizations such as the London Suppliers Group, West Germany is only obligated to insist on IAEA safeguards for what it sells to another country. The Argentines probably are counting on this fact to preserve their access to West German nuclear technology.

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Uranium Enrichment Capability

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