

Nuclear Latency (NL) Dataset
Country Coding Sheets

ARGENTINA

COW COUNTRY CODE: 160

List of Country's Enrichment and Reprocessing (ENR) Facilities

1. Ezeiza – SF Reprocessing Facility
2. Ezeiza II – SF Reprocessing Facility
3. Pilcaniyeu Enrichment Facility I
4. Pilcaniyeu Enrichment Facility II

Detailed Facility-Specific Information and Sources

1. Ezeiza – SF Reprocessing Facility

- a. *ENR type (diffusion, centrifuge, EMIS, chemical and ion exchange, aerodynamic isotope separation, reprocessing).*

Spent fuel reprocessing.

- b. *Facility size (laboratory, pilot, commercial).*

Laboratory.

- c. *Is the facility under construction or in operation? If under construction, list the construction years. If in operation, list the years of operation.*

The facility was under construction in 1968 and Zentner et al. (2005, 96) report that it was built in a year. While the facility is thought to have operated from 1968-1973 and to have extracted less than 1 kg of Pu, Barnaby (1982) states the facility operated from 1967 to 1977. The IAEA states the operational date is “around the 1970s.”

- d. *Was the facility developed covertly? If so, identify years that facility was covert.*

It does not appear that Argentina attempted to conceal the laboratory-scale plant from the international community.

- e. *Was the facility placed under IAEA safeguards? If so, identify the years that the facility was safeguarded.*

Buenos Aires refrained from ratifying the NPT until 1995. The plant may nonetheless have been subject to safeguards if it used foreign-supplied materials. However, Argentina argued that IAEA safeguards did not apply to the laboratory-scale plant at Ezeiza. We code this plant as unsafeguarded.

f. *Was the facility placed under regional safeguards? If so, identify the years that the facility was under regional safeguards.*

No.

g. *Did the facility have a military purpose?*

This was probably not a military facility. The military junta did not come to power until 1976, when this facility was thought to be dormant. It is possible, however, that the military had some degree of oversight over this plant.

h. *Was the facility multinational? If so, identify the other countries that were involved.*

No.

i. *Was the facility built with foreign assistance? If so, list the supplier(s) and what they provided.*

Argentina stated that it did not receive assistance in reprocessing from Italy or West Germany. There is circumstantial evidence that the facility benefitted from Italian aid but Italy has denied this. The Argentinian firm in charge of constructing the facility, Techint S.A. is owned by Techint International. This company owns half the stock of SNIA Technit Spa of Rome. Spector notes that it is possible the Italian firm “provided technical assistance on plutonium separation to its Argentine relation.”

j. *Sources:*

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2. Ezeiza II – SF Reprocessing Facility

- a. *ENR type (diffusion, centrifuge, EMIS, chemical and ion exchange, aerodynamic isotope separation, reprocessing).*

Spent fuel reprocessing.
- b. *Facility size (laboratory, pilot, commercial).*

Pilot.
- c. *Is the facility under construction or in operation? If under construction, list the construction years. If in operation, list the years of operation.*

Argentina also developed a larger, pilot-scale reprocessing plant at Ezeiza. Construction began around 1978¹ and stopped in 1990 due to political pressure. Scholars claim the facility was never operational (Reiss). There are no confirmed reports of significant quantities of plutonium being produced at this site.

d. *Was the facility developed covertly? If so, identify years that facility was covert.*

No, Argentina announced the facility publicly in 1978.

e. *Was the facility placed under IAEA safeguards? If so, identify the years that the facility was safeguarded.*

The plant itself was not safeguarded; it was subjected to Agency safeguards only when it reprocessed safeguarded materials. The Ezeiza plant appears on the IAEA's list of facilities that are safeguarded or contain safeguarded material in 2000. This is because foreign-supplied materials at the plant required safeguards. We do code the plant itself as operating under safeguards.

f. *Was the facility placed under regional safeguards? If so, identify the years that the facility was under regional safeguards.*

Yes, the facility was placed under ABACC safeguards in 1991 and continues to be under regional safeguards.

g. *Did the facility have a military purpose?*

No, the facility was for civilian purposes.

h. *Was the facility multinational? If so, identify the other countries that were involved.*

No.

i. *Was the facility built with foreign assistance? If so, list the supplier(s) and what they provided.*

No. Argentina may have received assistance from Italian West German firms, although it is unclear whether this aid was state-sanctioned. Argentina and Italy have denied receiving or providing any foreign assistance, while West Germany has denied it approved the activities of the German firm that assisted in construction. West Germany did however acknowledge that unregulated dual-use items were provided for the plant from German firms including remote manipulators. Spector notes that Argentinian nuclear installations, while indigenous "to a degree," were heavily reliant on foreign technology and equipment.

¹ The PNNL stated that the construction of the facility started in 1978, but the Kessler article states that 1976 was the construction start date. Redick says construction started in the "late 1970s."

j. Sources:

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3. Pilcaniyeu Enrichment Facility I

a. *ENR type (diffusion, centrifuge, EMIS, chemical and ion exchange, aerodynamic isotope separation, reprocessing).*

Uranium enrichment, gaseous diffusion.

b. *Facility size (laboratory, pilot, commercial).*

Pilot.

c. *Is the facility under construction or in operation? If under construction, list the construction years. If in operation, list the years of operation.*

Zentner et al. (2005, 13) state the facility started operating in 1987 with construction starting in 1979 and that it closed in 1994 following production problems. Other sources state that construction began in 1978 and it was completed in 1983. Zentner et al. indicate that the first operational enrichment took place in 1986. The facility operated until 1993 with significant problems. Additional experiments were conducted in 1993 and 1994. The facility was permanently shut down in 1997.

d. *Was the facility developed covertly? If so, identify years that facility was covert.*

The facility was developed covertly from 1979-1983. After Argentina's defeat in the Falklands War, it was revealed as a facility designed to produce 20% HEU.

e. *Was the facility placed under IAEA safeguards? If so, identify the years that the facility was safeguarded.*

IAEA safeguards came into force in the mid-1990s. However, the Pilcaniyeu plant was not technically operating at that time. We therefore do not code this facility as

being under safeguards, despite the fact that the IAEA later verified the material inventory.

- f. *Was the facility placed under regional safeguards? If so, identify the years that the facility was under regional safeguards.*

Yes, starting in 1991 facility was under ABACC safeguards.

- g. *Did the facility have a military purpose?*

The facility was developed by the military and Carlos Castro Madero, President of the Comision Nacional de Energia Atomica. The government stated, however, they it not intend to enrich past 20% HEU, a level insufficient for nuclear weapons.

- h. *Was the facility multinational? If so, identify the other countries that were involved.*

No.

- i. *Was the facility built with foreign assistance? If so, list the supplier(s) and what they provided.*

The facility was indigenously constructed and run by the military. Argentinian officials have stated that 15% of the materials for the construction came from abroad, but these materials were either non-sensitive or illicitly acquired. The Swiss company Sulzer Brothers supplied the electric generators and the entire cooling system for the plant, but claim that Argentina hid the true purpose of the facility from them.

- j. *Sources:*

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4. Pilcaniyeu Enrichment Facility II²

- a. *ENR type (Diffusion, centrifuge, EMIS, chemical and ion exchange, aerodynamic isotope separation, reprocessing).*

Uranium enrichment, gaseous diffusion using new SIGMA technology.

- b. *Facility size (laboratory, pilot, commercial).*

Pilot.

² Some might consider this facility to be a continuation of operations at the original Pilcaniyeu gaseous diffusion plant. We treat it as a separate facility because it employed a new, indigenously developed technology for enrichment (SIGMA).

- c. *Is the facility under construction or in operation? If under construction, list the construction years. If in operation, list the years of operation.*

Argentina announced the development of the SIGMA process in 2000. This is taken to be the construction start year. The facility was scheduled to re-open with improvements in 2007 but will not be commissioning until late 2012 or 2013.

- d. *Was the facility developed covertly? If so, identify years that facility was covert.*

No, the facility was announced internationally at the Youth Nuclear Conference in Bratislava, Slovakia.

- e. *Was the facility placed under IAEA safeguards? If so, identify the years that the facility was safeguarded.*

Yes, beginning in 1995, the entire complex at Pilcaniyeu was under IAEA safeguards. The new SIGMA facility has been under safeguards since construction began.

- f. *Was the facility placed under regional safeguards? If so, identify the years that the facility was under regional safeguards.*

Yes, it is covered under ABACC safeguards.

- g. *Did the facility have a military purpose?*

No, the facility is for civilian uranium enrichment.

- h. *Was the facility multinational? If so, identify the other countries that were involved.*

No.

- i. *Was the facility built with foreign assistance? If so, list the supplier(s) and what they provided.*

No.

- j. *Sources:*

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