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“Regulatory Perspective on Security of Radioactive Material during COVID-19 Outbreak” ARN Argentina

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SENIOR SAFETY AND SECURITY REGULATORS' MEETING
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Nuclear Regulatory Authority (ARN)

It is an **autarchic governmental** entity within the jurisdiction of the General Secretariat of the Presidency of the Nation, whose mission and responsibilities are established through the **National Law on Nuclear Activity** (No. 24804), published in the Official Gazette on April 25, 1997.



Nuclear Regulatory Authority (ARN)

The objectives fixed by the Nuclear Law imply that the ARN must exercise its regulatory powers over all the nuclear / radioactive activities of the country and, according to each case, the **competences of the ARN** will be extended to the following regulatory areas:

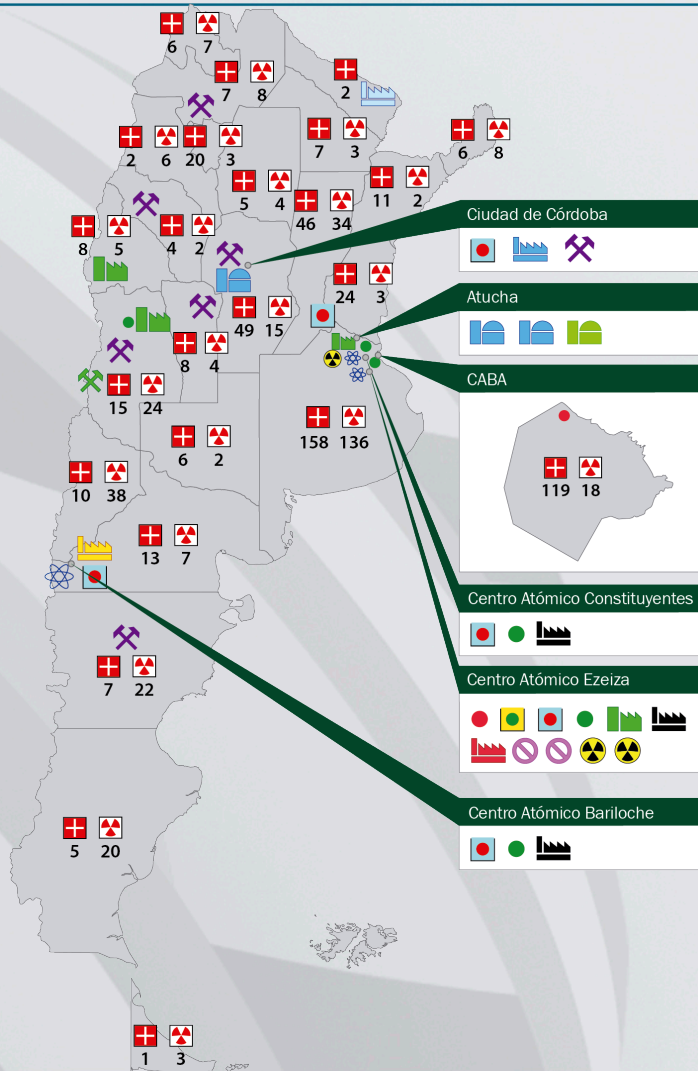
- Radiological Safety
- Nuclear Safety
- Safeguards and Non-proliferation
- Physical Protection**



- Responsible of preparedness and response in case of nuclear and/or radiological emergency**



Distribution of Facilities in Argentina

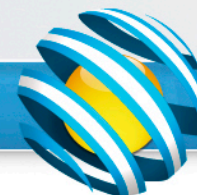


Principales instalaciones bajo control regulatorio 2019

- Sede Central ARN (CABA)
Laboratorios ARN y Centro de Capacitación Regional (Centro Atómico Ezeiza)
- ⚛ Centros atómicos (Bariloche - Constituyentes - Ezeiza)
- ⚙ Centrales nucleares (CNA I, CNA II y CNE)
- 🏗 Reactor Multipropósito RA-10 en construcción (Centro Atómico Ezeiza)
- 🏗 Reactor Prototipo CAREM 25 en construcción (Lima, Buenos Aires)
- ⚙ Reactores de Investigación y conjuntos críticos
- Aceleradores de partículas Clase I (Centro Atómico Bariloche, Buenos Aires, Mendoza)
- ☢ Plantas de producción de radioisótopos
- 🏭 Plantas de Irradiación
- ⚙ Instalaciones del ciclo de combustible
- 🏗 Complejo Tecnológico Pilcaniyeu (Río Negro)
- 🏭 Fábrica de Combustibles Nucleares (CONUAR - Centro Atómico Ezeiza)
- ⚙ Complejo Fabril Córdoba (CNEA - DIOXITEK, Córdoba)
- ⚙ Planta de Producción de Dióxido de Uranio en construcción (DIOXITEK, Formosa)
- ⊘ Área de Gestión de Residuos Radiactivos de CNEA (Centro Atómico Ezeiza)
- ⚙ Ex complejos minero fabriles fuera de servicio
- ⚙ Complejo minero fabril remediado (Malargüe, Mendoza)
- ⚙ Centros de medicina nuclear, radioterapia y radioinmunoanálisis (539)
- ☢ Instalaciones de gammagrafía y aplicaciones industriales (374)
- ☢ Otras instalaciones para usos menores (no incluidas en el mapa) (292)

Total de instalaciones **1.290**

ARN licenses facilities/practices and associated personnel



Classification of Facilities

ARN Basic Standard (AR 10.1.1) establishes 3 types of facilities/practices, taking into account a graded approach in accordance with the associated radiation risk:

- *Class I: Nuclear Power Plants, Research Reactors, Production Facilities, Industrial Irradiators, Nuclear Facilities with Criticality Potential, Radioactive Waste and Spent Fuel Management Facilities, etc.*
- *Class II: Industrial Radiography, Well Logging, Telecobaltotherapy, Brachitherapy, Nuclear Medicine, Nuclear Facilities without Criticality Potential, etc.*
- *Class III: Minor Facilities, Research, Training.*



Licensing Process

- *Class I: construction, commissioning, operation, decommissioning licences.*

There is a Prime Responsible for safety, security and safeguards. In addition, could be a contact for security.

Mandatory documentation: safety report, emergency response plan, security system design report, etc.

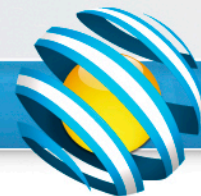
- *Class II: operation licence.*

There is a Responsible for radiological safety.

Facilities/practices with Category I-II sealed sources and NFC facilities shall designate a Responsible for security.

Mandatory documentation: safety report, emergency procedure, security system design report (Category I-II sealed sources and NFC facilities).

- *Class III: registration.*



COVID-19 Outbreak – Chronology in Argentina

- March 3: first case of COVID-19 is detected.
- March 6: exceptional 14-day license is established for all people coming from risk countries (voluntary preventive social isolation).
- March 11: WHO declared COVID-19 a pandemic.
- March 12: the health emergency is extended for a year, and a 14-day mandatory preventive social isolation is established for all people coming from risk countries.
- March 15: educational centers are closed; massive events are suspended; borders are closed; it is established a license for people at a higher risk of getting severe COVID-19 disease.
- March 20: it is established a mandatory preventive social isolation (MPSI), except for workers associated with activities declared as essential (health, security, transport, energy, food, among others). This decree is being renewed every 2 weeks, with different specifications.



COVID-19 Outbreak – Chronology in ARN

- March 10: new Board of Directors is appointed.
- March 13: Class I facilities are required to inform ARN their contingency plans during the pandemic, which must ensure safety and security conditions.
- March 18: ARN extends the validity of previously granted authorizations, expiring until April 30, indicating that the implementation of the safety and security culture in the facilities and in the personnel in charge of the authorized practices should be alerted and maximized. This resolution is being renewed every 2 months.
- March 20: the MPSI is established, implying home office for everybody, except for workers associated to essential tasks.



COVID-19 Outbreak – ARN activities during MPSI

- Home office, except for workers associated to essential tasks;
- Technical assessments;
- Licensing activities (both for facilities/practices and personnel), complying with the established steps (integrating safety/security/safeguards aspects);
- Remote control activities and a few on field inspections (it is decided case by case, due the inspection plan was suspended);
- Direct communications with the Responsible Entities;
- Import/Export authorizations;
- Radiological and Nuclear Emergencies Intervention System has been activated a few times (no security related events);
- Regulatory requirements have not been relaxed;
- FTP (File Transfer Protocol) for exchanging documentation.



COVID-19 Outbreak – ARN security activities during MPSI

- First, Class I facilities were requested to inform their status regarding security aspects, taking into account some of them are operating with reduced staff and other have suspended their operation;
- Then, it was performed a similar task covering industrial radiography companies,
- Based on that information, control activities are planned and performed;
- Enforcement actions are taken if needed;
- The security design report forms (and instructions) were updated;
- Small Modular Reactor CAREM-25 (under construction) security design report was assessed and approved;
- Multipurpose Research Reactor RA-10 (under construction) security design report is being developed;
- Transport security plans for Category I Co-60 sources and nuclear material were assessed and approved.



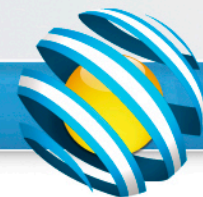
COVID-19 Outbreak – Facilities during MPSI

- Nuclear Power Plants Atucha I-II and Embalse are operating with reduced work shifts. The operator was requested to prioritize communications regarding the operation and security/safety related events.
- Productions facilities (nuclear fuel elements, sealed sources, radiopharmaceuticals, etc.) are working.
- In general, they have taken special measures such as minimize the entrance of persons to the facilities, strengthen security measures, use exclusive staff transportation, provide virtual training for the staff.
- The operation of other facilities depends on if were declared as essential activities and the epidemiological situation in the zone, among other factors.



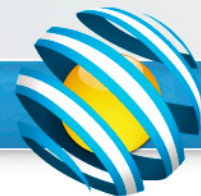
COVID-19 Outbreak – Transport of radioactive material

- The transport of radioactive material is carried out without major inconveniences, complying with the applicable safety/security requirements according to the type and category of material to be transported.
- As civil aviation is suspended, the consignors (providers) have expanded their land distribution network, as far as possible, also considering that the traffic is much less than usual and there are also many control points. They also transport the shipments by special flights when available.
- Import/Export activities are being performed, complying with all applicable requirements.
- In particular, it is noteworthy that during the pandemic, shipments of radiopharmaceuticals are exported to Chile, Ecuador, Paraguay, Peru and Uruguay every week, and an export of Category I Co-60 sources to Ireland was carried out last month.



COVID-19 Outbreak – Conclusions

- It is important to ensure the continuity of regulatory functions, establishing a sustainable regulatory framework;
- Control tasks should be performed, combining remote and field activities;
- Communications with users should be strengthened, compensating the decrease of control activities;
- Emergency plans and contingency plans should be required to consider actions to take in the case of a pandemic (or other natural massive events);
- It is important to continue training the staff, in virtual mode.



Thanks for your attention

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