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BEST PHYSICAL PROTECTION PRACTICES IN SPANISH NUCLEAR POWER PLANTS

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2 Content (19 slides)

1. Introduction:

- Spanish Nuclear sites,
- Competent Authorities
- Nuclear Security Milestones
- NS Requirements

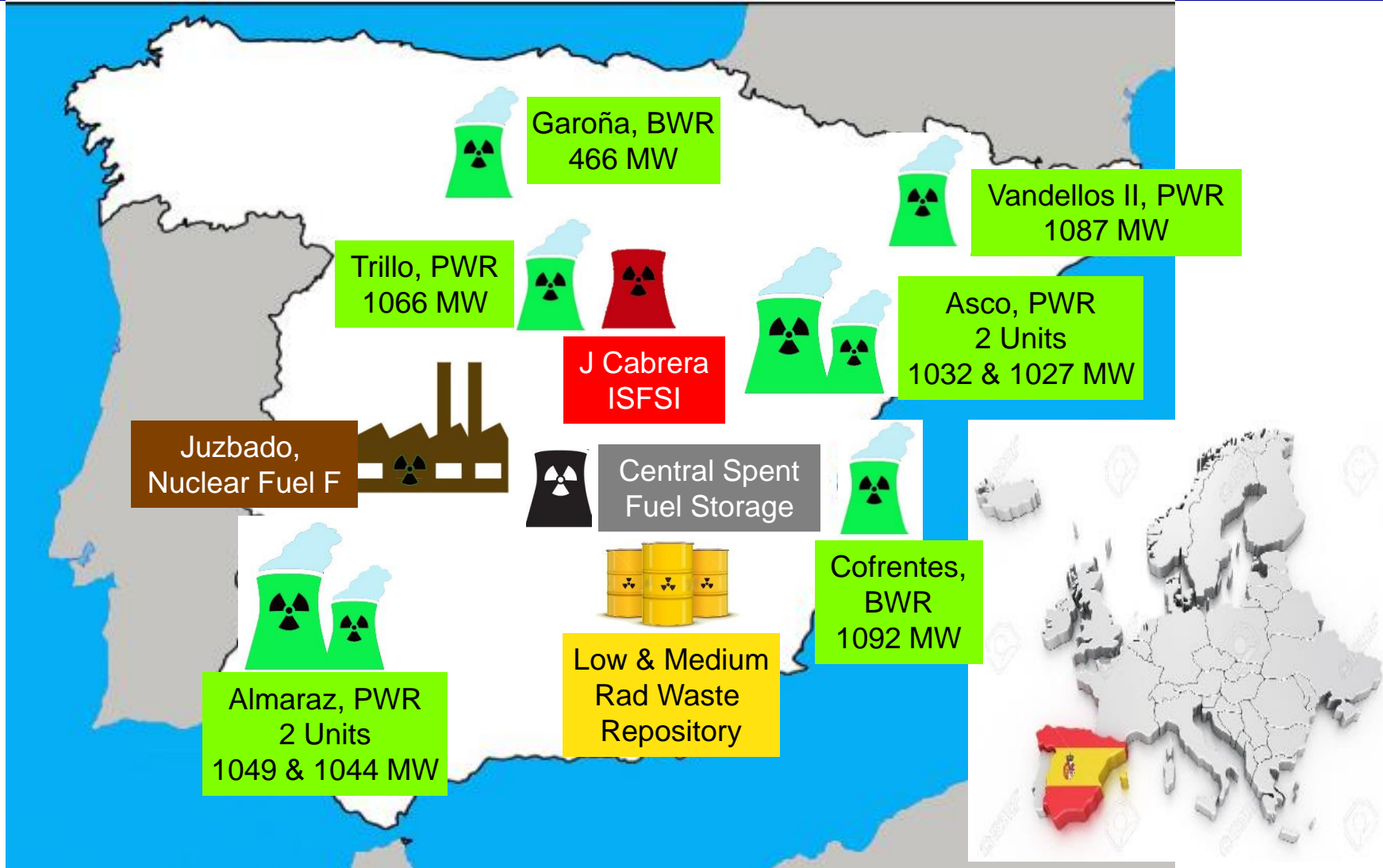
2. Examples of Best Practices:

- Physical Barriers
- IDS
- CCAA
- Airborne Detection
- Alarm Assessment
- Patrolling
- Training
- Security Culture



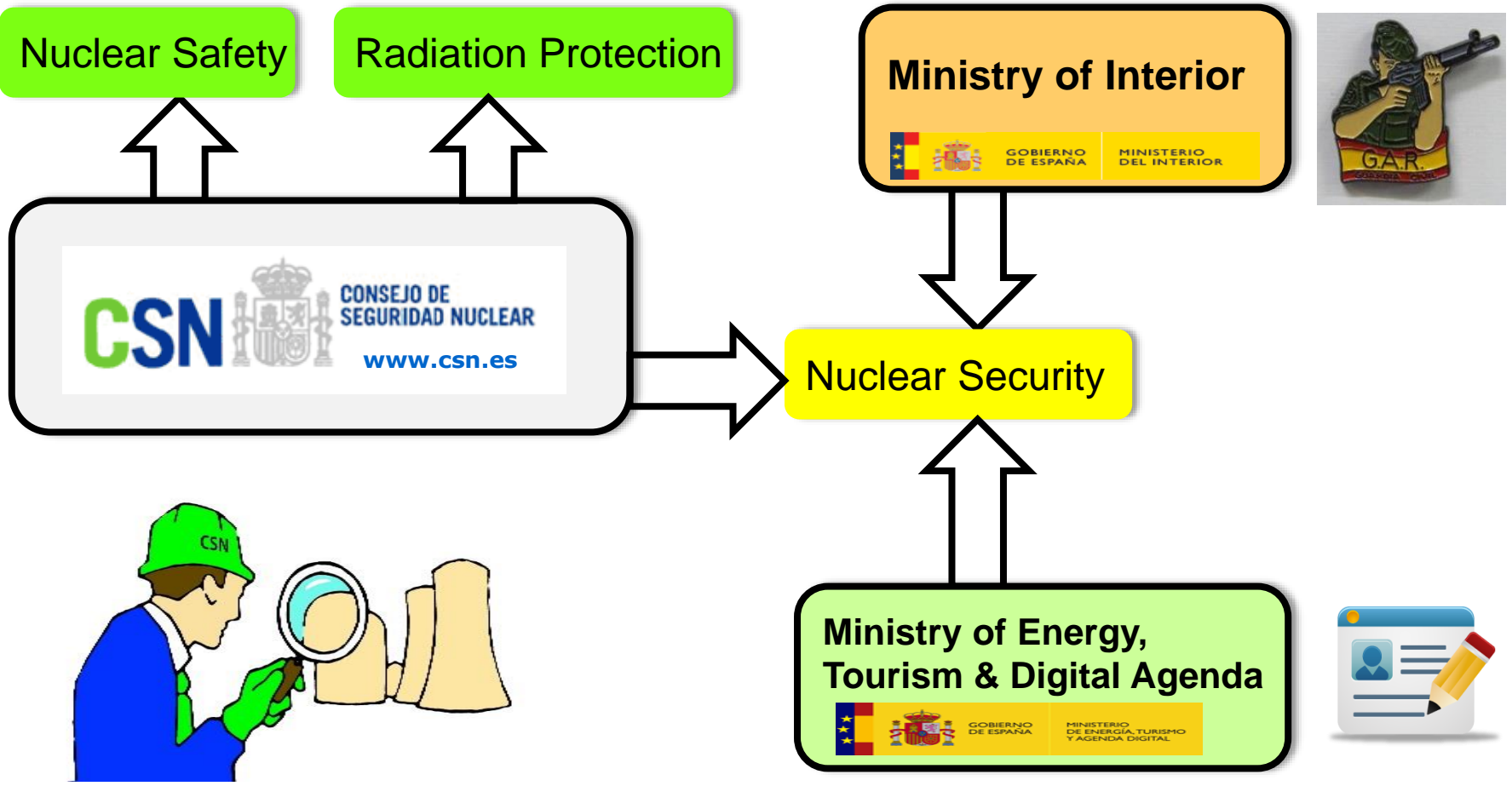
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Spanish Nuclear Sites

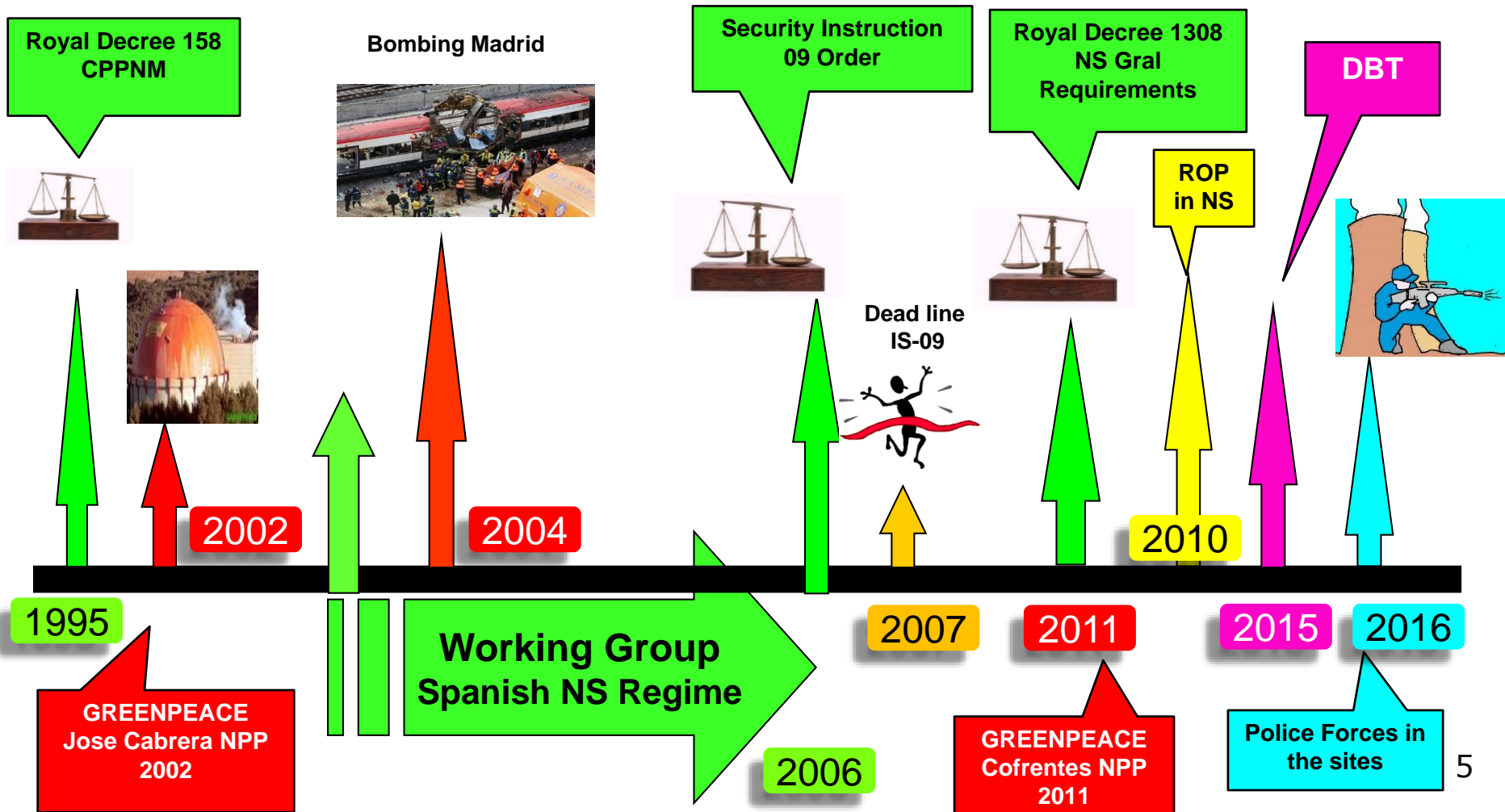


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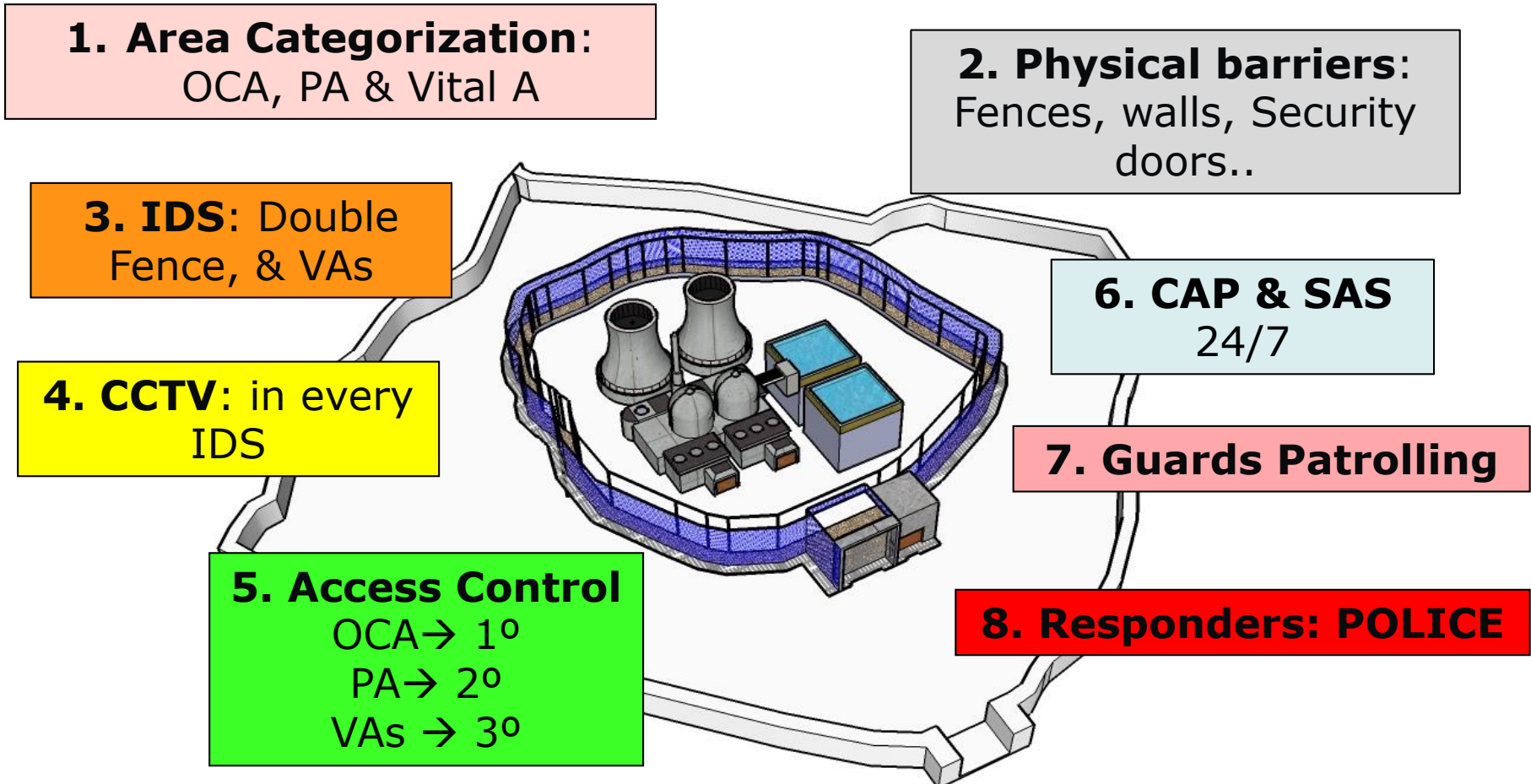
Regulatory Authorities



5 | Important security events

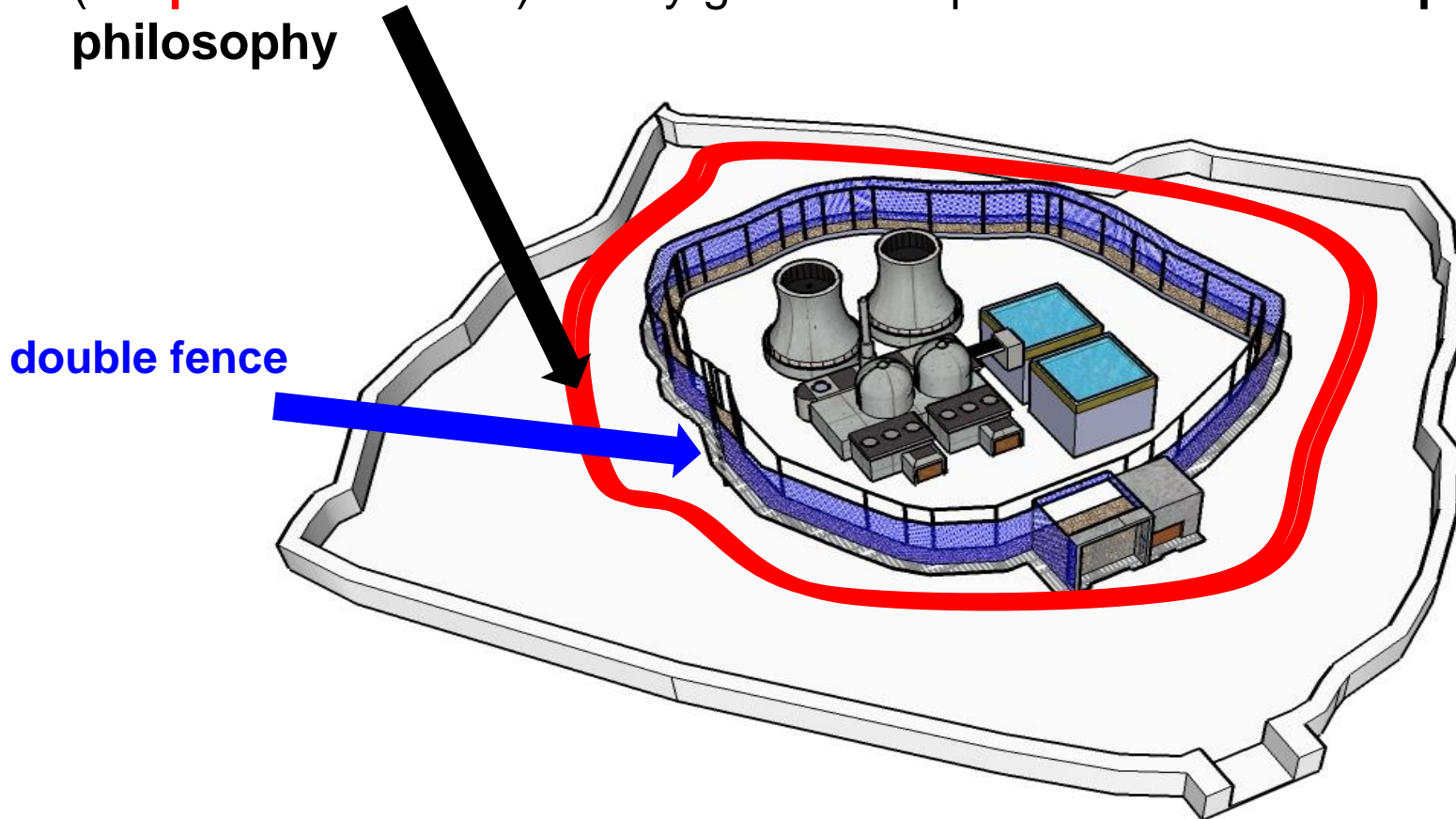


6 Nuclear Security Requirements



7 BP: Physical Barriers 1

- ✓ One NPP has installed **another double fence** also with **IDS** and **TV cameras**, of course is larger because is in between the OCA and PA (“**Supervised Area**”) → very good example of **Defense in Depth** philosophy



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BP: Physical Barriers 2

- ✓ NPPs have strengthened the barriers with many wires and concertina so the fences have **strong iron beams** to bear all these devices



9 BP: Intrusion Detection Systems

- ✓ Operators have a set up a large **variety of sensors with different technology** along the security areas (more than it is required). There is no doubt that the vehicle entrance to the PA could be a weak point. **How could be detected people hidden in big trucks where many times is very difficult to search?**



- ✓ There are two Operators who are using a **Heartbeat Sensor**, this is a sort of wires connected to several parts of the vehicle to read that movement of the heart. It is very easy and fast to use it, and very effective

10 BP: Control Access of materials to PA

- ✓ It is sometimes difficult, especially during refueling periods when there are a lot of vehicles getting into the PA, nuclear operators besides to search and use explosive detectors have **sniffing dogs to detect explosives** that could be hidden in any part of the truck



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BP: Control Access to VAs



- ✓ NPPs are very worried about the **insider threat**. So there are operators who have **strengthen VA entrances** and there are facilities with a **sort of iron cage before getting into a building** with vital systems in spite inside the building there are alarmed and security doors with IDS and TV cameras. Even in these iron cages there is also a **security guard**.

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BP: Airborne Detection



- ✓ Spanish regulation does not require **airborne detection systems**, however there is a NPP which has two **radars** in order to **detect and produce an alarm if there is flight object approaching**. That information is displayed in CAS and they have written down a procedure to notify to the security aviation competent authorities

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BP: Alarm Assessment



- ✓ Every alarm coming from a sensor must be evaluated and the best means is to have a **TV camera**. But sometimes **one is not enough**, so it is very extended to assess the alarm with **two or more cameras**, even one of them is a **tilt pan zoom camera**, so it does allow the control alarm stations' operator to have different perspectives of the zone and even to zoom it from different directions

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BP: Patrolling faster



- ✓ Distances in most of the sites are very long and in somewhere there are not easy paths to drive. To solve that problem some Operators have bought **electric motorcycles**, and by this way **guards can patrol along the site and arrive to several places faster** than using any car

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BP: Training & Exercises



- ✓ That is one of the key factors to minimize the human error and also to have a successful PPS. There is a close and very good **relationship** between **Police Forces and Nuclear Security Guards**, so Police often come to the facilities to perform joined exercises, and Guards also go to the Police facilities to be trained. There is a very good connection among them

16 BP: Security management

- ✓ Self-assessment in security is crucial. There are several best practices about this issue.




- ✓ One example is the self-evaluation performed by security managers through the **Annual Security Problems and Resolutions Report**, in which they are tracking all the failures in any of the components, equipment, processes and procedures of the PPS, and afterwards they can perform statistics and evaluation, so they can get very useful trends, conclusions and effective performance information

17 BP: Security culture


- ✓ That is one of those indicators which can tell how well a nuclear facility works. A NPP has provided **a comic** to remind through the drawings that the workers must obey the security rules: **passing through the portal detectors, using their badges, swiping their cards, and the security guards are performing their responsibilities, searching the vehicles, patrolling the site...**

Seguridad Física y Lógica

2. En zonas de **Exclusión de Materiales Extraños**, entrégala al **monitor FME** o manténla sellada.
3. En trabajos con riesgo de atrapamiento, guárdala en un lugar protegido.




► Fuera del emplazamiento cuidamos y custodiamos la tarjeta **TIP** y la **tarjeta de identificación del vehículo** y comunicamos de forma inmediata su pérdida o robo.



CSN : PA-171, PA-170/ CNA: PA-170, PA-107

Seguridad Física y Lógica

► Es obligatorio fichar en todas las **lectoras** que nos encontremos a la entrada de edificios o de cubículos. Debemos fichar de manera correcta y deben fichar todas las personas que vayan a acceder a la zona. En caso de error o de cualquier incidencia debemos avisar inmediatamente al personal de Seguridad Física.



► En el caso de **fichaje de un grupo de personas** en una misma puerta:

- Debemos fichar todas las personas menos la última sin abrir la puerta.
- La última persona es la que finalmente abre la puerta y da acceso al resto.
- Cada uno debe verificar que el LED se ha puesto VERDE y/o ha aparecido el mensaje de "PASE".

ANAV: PA-170

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BP: Security culture



- ✓ As a part of security culture, Operators have **periodic meeting** among them in order to **discuss common security problems and find out solutions**, so they try different equipment and systems and inform each other about the pros and cons.
- ✓ This has a very productive outcome, because that means that there are 6 security managers looking for a solution instead just only one.

19 Conclusions

1. To have an **EFFECTIVE NUCLEAR SECURITY REGIMEN** is due to the proper oversight of the competent authority, the good motivation of the operators and a very close relationship between them
2. **NUCLEAR SECURITY PERFORMANCE** at Spanish NPPs has been **IMPROVED** progressively in the last decade

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Thank you for your attention

