

# Safety of Radioactive Waste Processing

Daniela E. Alvarez

Nuclear Regulatory Authority  
Argentina



Autoridad Regulatoria  
Nuclear  
Presidencia de la Nación Argentina

International Atomic Energy Agency Scientific Forum

**RADIOACTIVE WASTE:  
MEETING THE CHALLENGE**

Science and Technology for  
Safe and Sustainable Solutions

23–24 September 2014, Vienna, Austria

## Safety of Radioactive Waste Processing

Every industry produces waste

In nuclear activities:

**The fundamental safety objective is to protect people and the environment from harmful effects of ionizing radiation**

control

restrict

mitigate

# Safety of Radioactive Waste Processing

## IAEA Safety Standards

for protecting people and the environment

Predisposal  
Management of  
Radioactive Waste

Ge  
No

## IAEA Safety Standards

for protecting people and the environment



Governmental, Legal  
and Regulatory  
Framework for Safety

General Safety Requirements Part 1  
No. GSR Part 1



## IAEA Safety Standards

for protecting people and the environment

Fundamental  
Safety Principles



Safety Fundamentals  
No. SF-1



## IAEA Safety Standards

for protecting people and the environment

Disposal of  
Radioactive Waste

## IAEA Safety Standards

for protecting people and the environment

Radiation Protection and  
Safety of Radiation Sources:  
International Basic  
Safety Standards

INTERIM EDITION

General Safety Requirements Part 3  
No. GSR Part 3 (Interim)



# Safety of Radioactive Waste Processing

## Requirements

**Responsibilities**

**Facilities  
operation**

**RW management**

➔ Government responsibilities: national policy & strategy,  
legal framework

➔ Regulatory Body responsibilities: requirements, guidelines  
reviewing/verification

➔ Operator responsibilities: prime responsibility for safety -  
safety assessment

# Safety of Radioactive Waste Processing

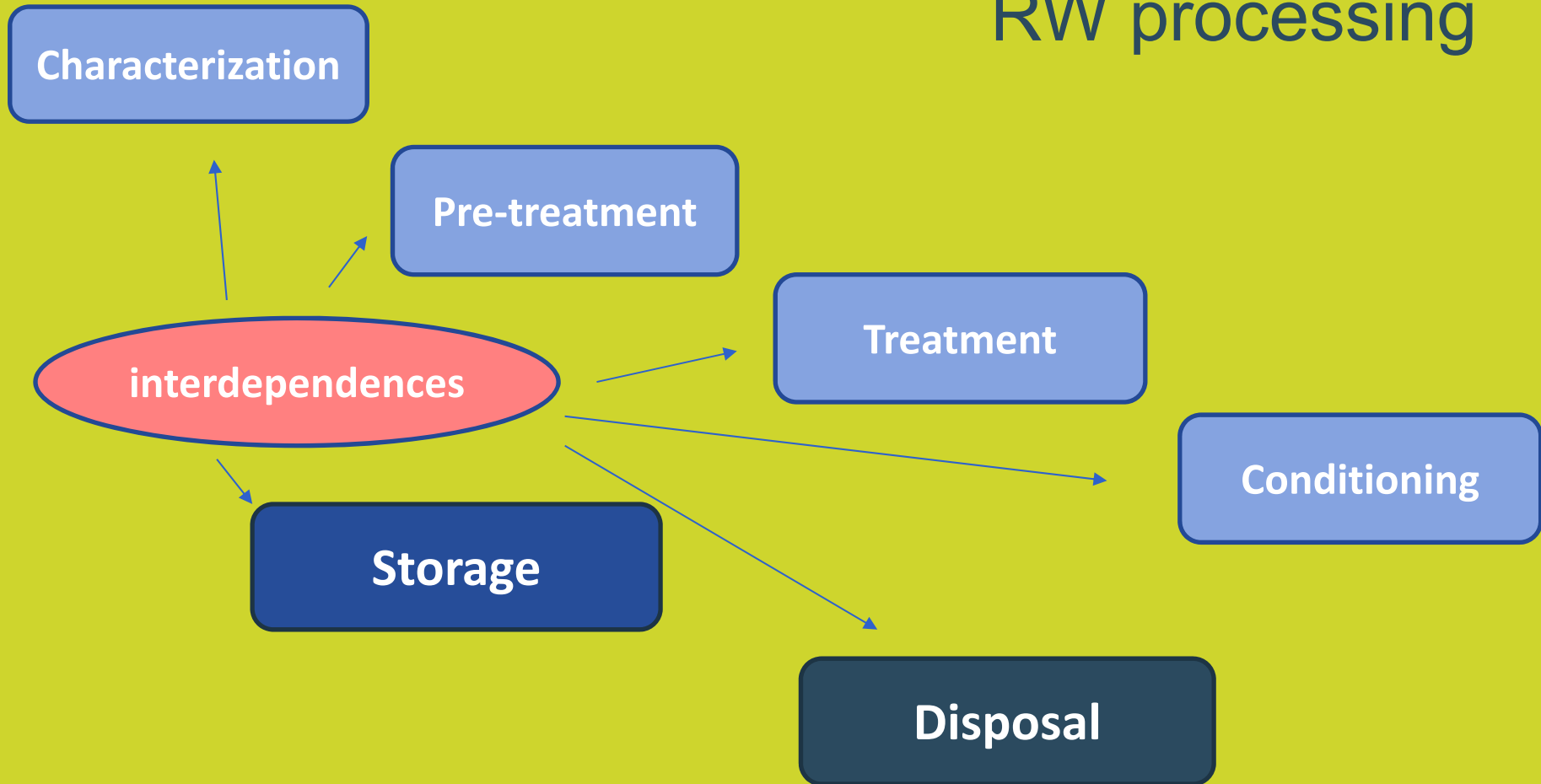
## Roles:

clear independence  
between Institutions



# Safety of Radioactive Waste Processing

Application in all steps of the  
RW processing

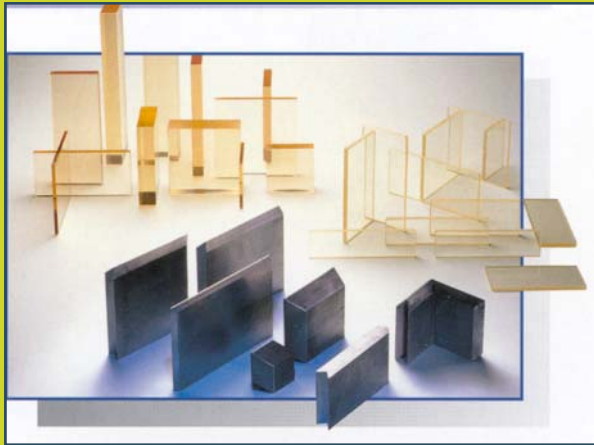


# Safety of Radioactive Waste Processing

## How?



# Safety of Radioactive Waste Processing



shielding



monitoring

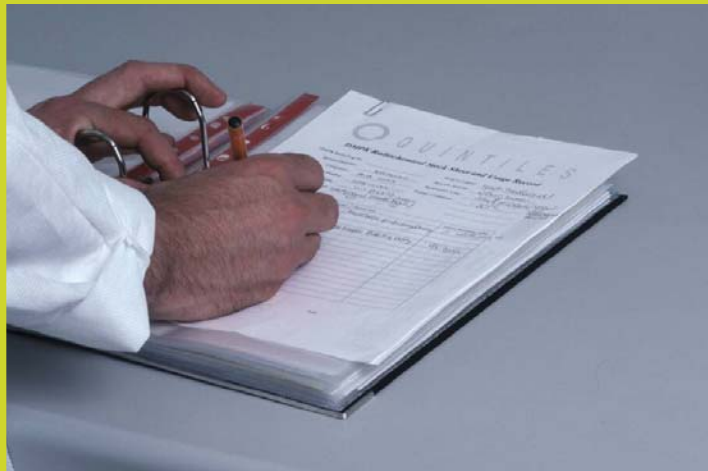




# Safety of Radioactive Waste Processing



controlled  
areas



proceedings  
+  
recording

supervising



## Safety of Radioactive Waste Processing

# Principal approaches to the RW management



**“delay and decay”**



**potential clearance**

# Safety of Radioactive Waste Processing

## Principal approaches to the RW management

“dilute and disperse”



carry out within authorized limits established by the regulatory body



monitoring

releases control

# Safety of Radioactive Waste Processing

## Principal approaches to the RW management

storage



“concentrate and contain”

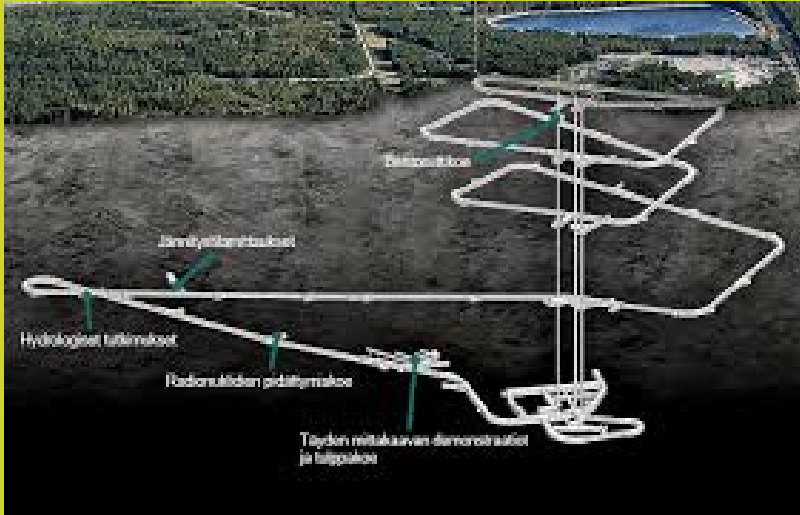
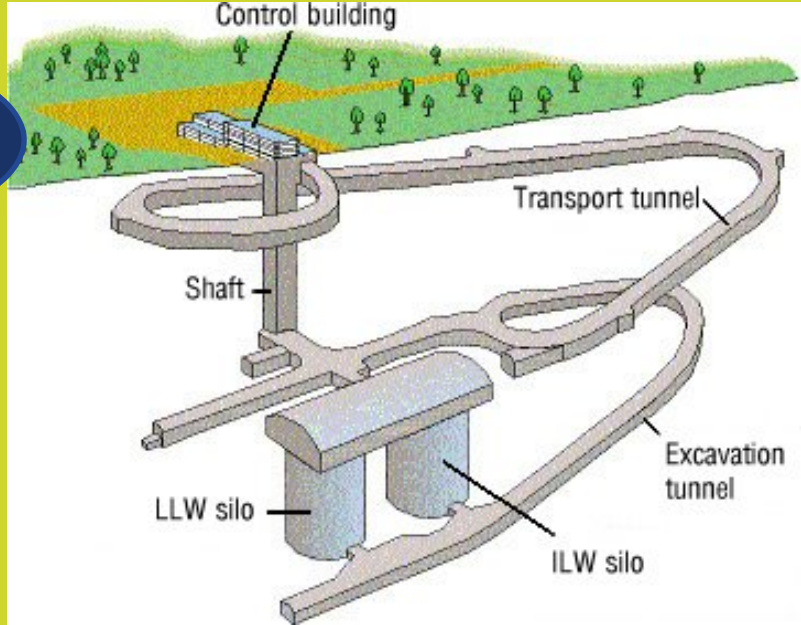
periodical inspections !



# Safety of Radioactive Waste Processing

## Finally...

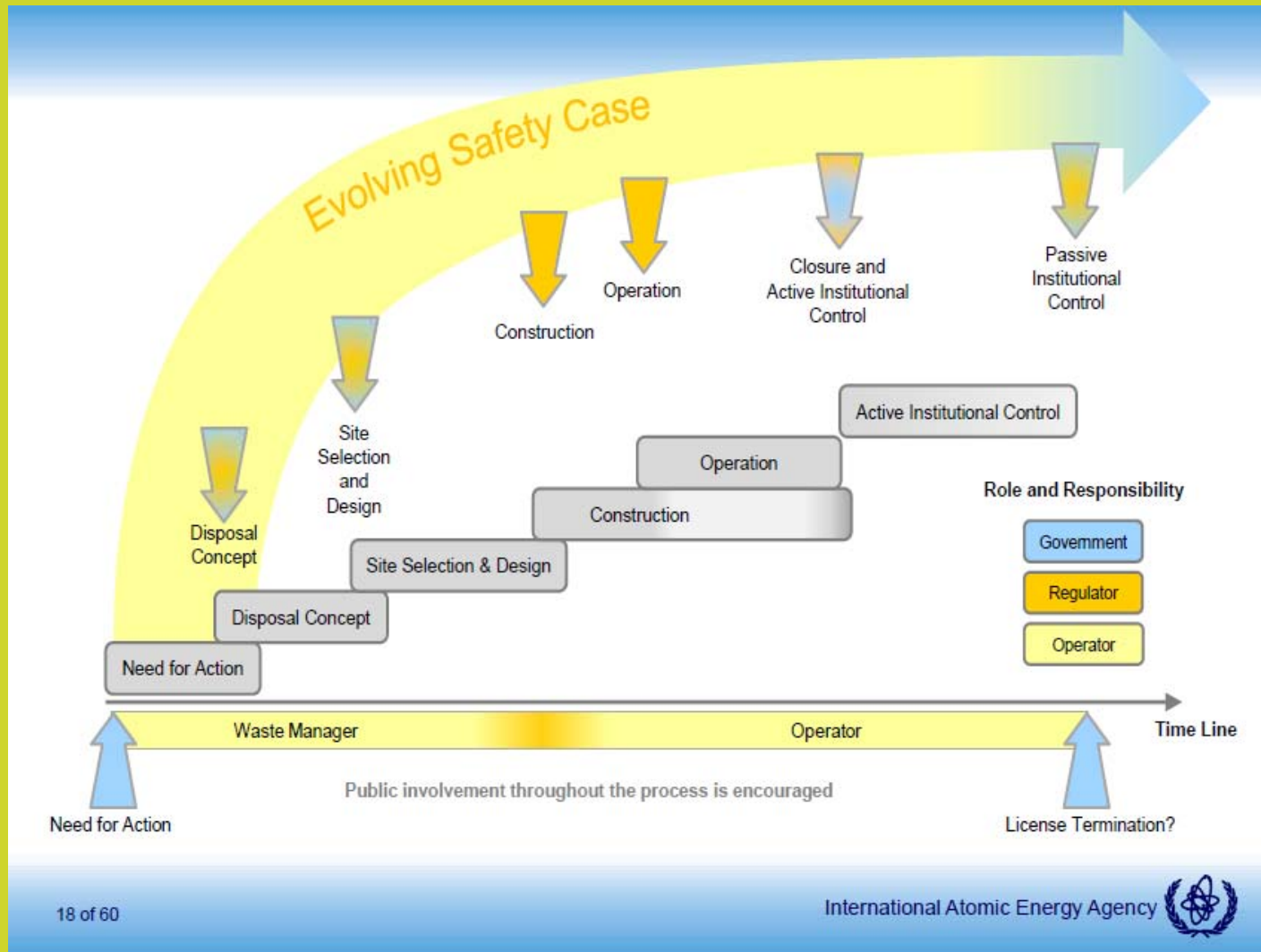
disposal



# Safety of Radioactive Waste Processing

## Safety assessment (step-by step approach - disposal concepts)

c  
o  
n  
f  
i  
d  
e  
n  
c  
e



**THANK YOU VERY MUCH  
FOR YOUR ATTENTION !!!**

# Safety of Radioactive Waste Processing

Autoridad Regulatoria Nuclear

Av. del Libertador 8250 (C1429BNP)

Ciudad Autónoma de Buenos Aires, ARGENTINA

Tel.: (+54) (011) 4125-8436

Fax: (+54) (011) 4125-8460

[http:// www.arn.gov.ar](http://www.arn.gov.ar)

E-Mail: [dalvarez@arn.gov.ar](mailto:dalvarez@arn.gov.ar)



Autoridad Regulatoria  
Nuclear

Presidencia de la Nación Argentina