

# SOME EXPERIENCE FROM LICENSING PROCEDURE FOR LHC

Ghislain Roy  
Safety Unit  
Accelerators and Beams Department  
CERN

# Legal Status of CERN

CERN = Intergovernmental organisation (IGO)

National laws are not applicable

Rules and regulations derive from international law

CERN has own set of safety rules inspired by European directives or national laws

# Host States

CERN territory across FR-CH border

Concern for Safety :  
**Radiation Protection Committee**

Need for informal discussions :  
**Tripartite Committee**

# Convention = Treaty

Agreement or contract between two or more States and/or IGOs.

With obligations on both sides

Penalties can be foreseen

# Convention

**Signed 11 July 2000:**

Convention between CERN and the Govt. of the French Republic regarding the safety of the installations linked to the LHC and the SPS

Added to the scope :

- Interim storage of radioactive materials.
- Parts of the CNGS installation.

# Convention

Ipso-facto defines the CERN – FR relationship  
partners on equal footing  
not « operator vs authority »  
...although the wording contradicts this

CERN is not one of the French basic nuclear  
installations (INB)

# and Switzerland ?

Swiss authorities are informed  
by CERN and/or FR authorities,  
and closely followed the licensing process

CH is usually more pragmatic and less  
doctrinal than FR

Tripartite Convention being discussed

# Actors

CERN

Safety Commission and Chef d'installation

FR - Autorité de Sûreté Nucléaire

FR - Institut de Radioprotection et  
Sûreté Nucléaire

CH - Office Fédéral de la Santé Publique



« Autorité de Sûreté Nucléaire »

Nuclear Safety Authority

Oversees all civil nuclear activities in France

Nuclear safety and radiation protection

Being helped by a technical body (IRSN)

# « Institut de Radioprotection et Sûreté Nucléaire »

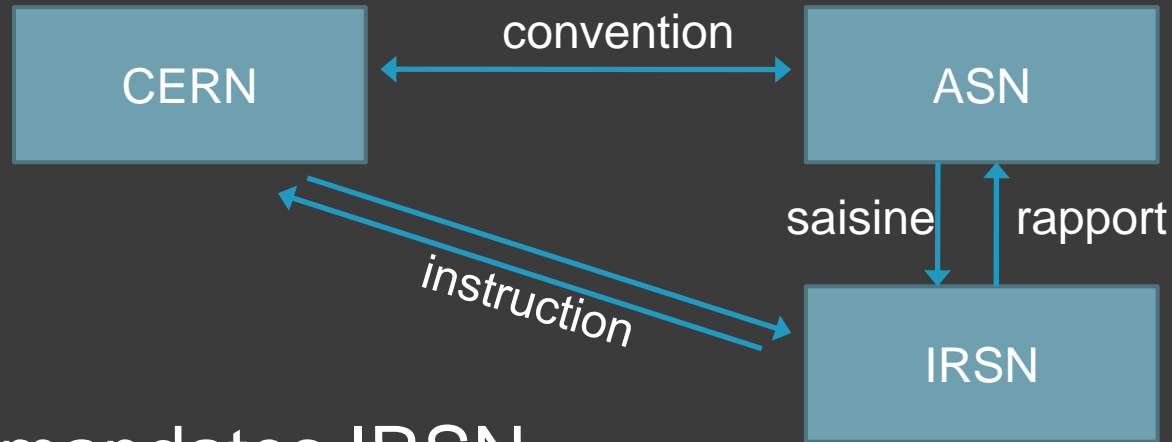
Radiation protection and nuclear safety institute

Stems from Commissariat à l'Énergie Atomique

Technical expertise

Also an expert for military installations

# Instruction



1. ASN mandates IRSN to analyze the Safety Documents (access safety, radiation protection, environment)
2. IRSN and CERN exchange information
3. IRSN delivers report to ASN in a contradictory meeting with CERN

# Documents

- ① **Safety Report**
- ① **General Operating Rules**
- ① **Waste Study**
- ① **Internal Emergency Plan**

# Document lifecycle

- Preliminary Safety Report As designed
- **Provisional Safety Report** As built
- Final Safety Report As operated
- Decommissioning Safety Report

# Instruction

over 2 years with regular meetings  
in Paris or at CERN.

Submission of the report one year ahead of  
contradictory meeting

Faxes back and forth...

- 300 pages in total
- Questions / requests
- Answers / additional documents

There is a cost to this !

# Structure of Safety Report (832 pages)

## Part 1 : Descriptive

|                          |                         |
|--------------------------|-------------------------|
| 1 – Introduction         | 6 – Waste and effluents |
| 2 – Site                 | 7 – Inventory of risks  |
| 3 – Surroundings         | 8 – Past experience     |
| 4 – Detailed description | 9 – Decommissioning     |
| 5 – Operation            |                         |

## Part 2 : Demonstrative

|                                       |  |
|---------------------------------------|--|
| 1 – Nuclear risks                     | 5 – Quality Assurance                    |
| 2 – Management of waste and effluents | 6 – Safety tests                         |
| 3 – Impact from operation             | 7 – Referential for Radiation protection |
| 4 – Worst case scenarios              |  |

# Structure of Operating Rules (135 pages)

Operational document or handbook  
similar to « conduct of operations » in some ways

|                          |                                  |
|--------------------------|----------------------------------|
| 0 – Introduction         | 6 – Operation consignes          |
| 1 – Installations        | 7 – General safety consignes     |
| 2 – Organisation of CERN | 8 – Criticality consignes        |
| 3 – QA organisation      | 9 – RP consignes                 |
| 4 – Operational envelope | 10 – Conduct of incidents        |
| 5 – Operation documents  | 11 – Periodic controls and tests |



# Licensing of LHC

No formal recommendations from IRSN  
A first ; success story for IRSN.

Contradictory ?  
We agreed on all major points.

Did we « give » too much, too easily ?

- Not a commercial negotiation,
- Agreeing on Safety is GOOD!
- Except for « doctrinal » issues...

# Followup

Regular visits by ASN and IRSN

« inspection » against our Report and RGE

Annual « Operation and Safety Report »

Many chapters have been agreed upon in the final round of discussions.

Final Safety Report by 2013

# Conclusions

Safety Documentation needs to be done

Sound process and comprehensive outline

Concept extended to other projects and installations

Management of this documentation requires a culture of QA in operation...

# Conclusion on principles

An IGO should be watchful of its rights and never waive them, for example by agreeing to abide by a national licensing scheme.

Sometimes it means walking a fine line...

« what are the INB requirements ? »  
is still heard too often.

Thanks for your attention!

Questions and comments  
are very welcome...