IRSN ORGANISATION

François Barré IRSN, Major Accident Prevention Division

Alain CHABOD IRSN, Reactor Safety Division

Institute for Radiological Protection and Nuclear Safety

General director
Jacques Repussard

Michel Brière Philippe Jamet

Operational units

Reactor Safety Division
Martial Jorel

Plants, Laboratories, Transports and Waste Safety Division
Thierry Charles

Nuclear defense Expertise Division
Jérôme Joly

Major Accident Prevention Division
Michel Schwarz

Radiological Protection and Human Health Division
Patrick Gourmelon

Environment and Emergency Operations Division
Didier Champion

Functionnal units

Strategy, Development, and External Relations Division
Michel Bouvet)

Scientific and Technical Assessment and Quality Management Division
Joseph Lewi

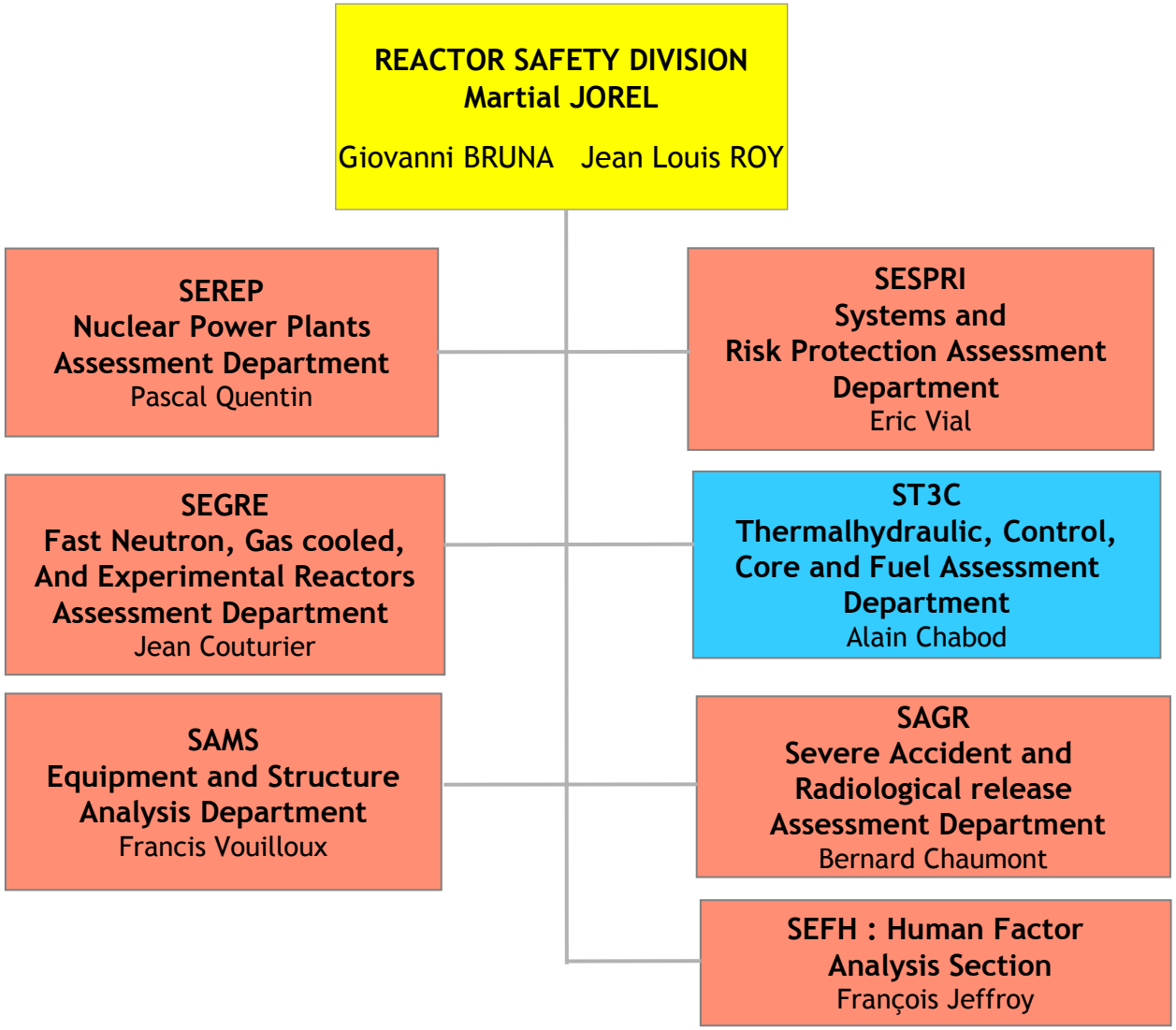
Administration Division
Jean-Baptiste Pinton

Communication Division
Marie-Pierre Bigot

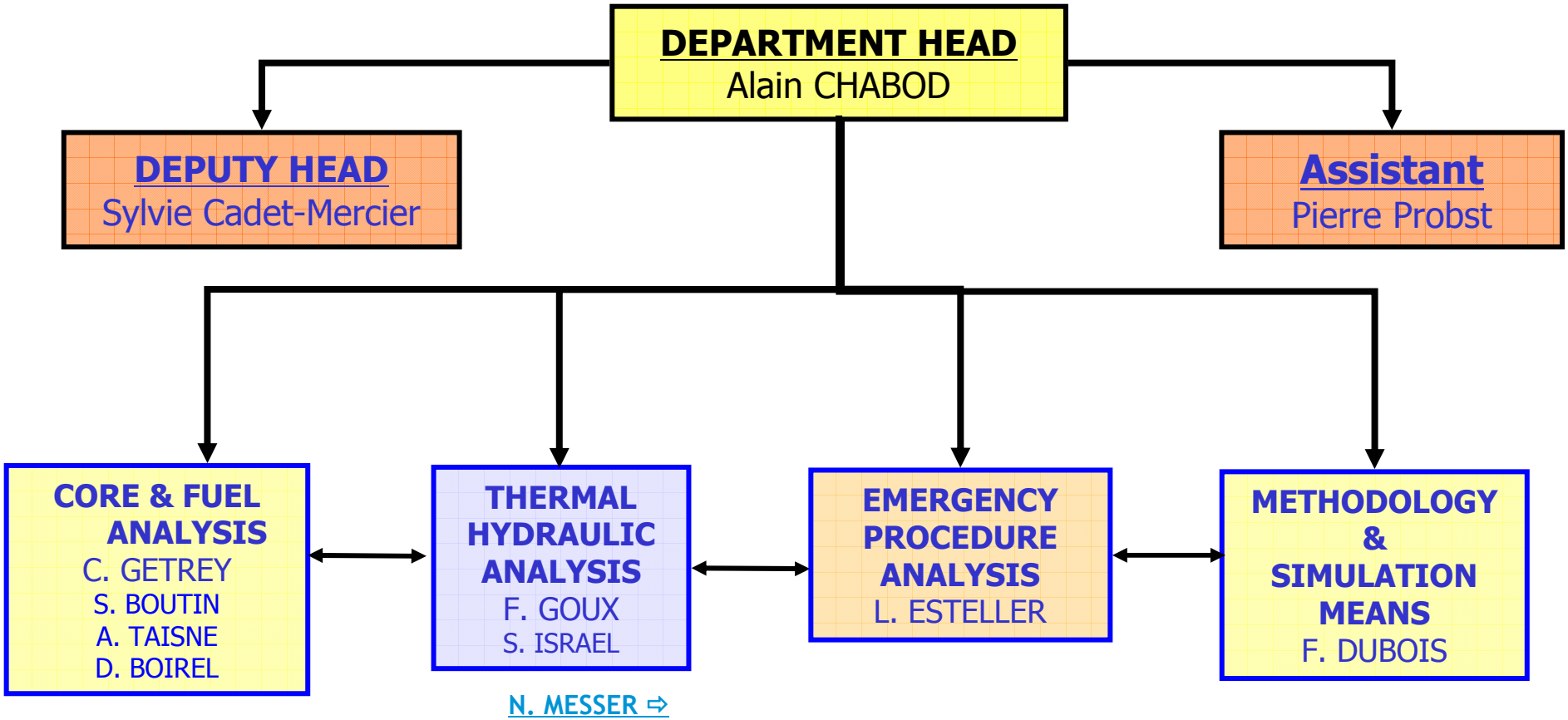
Accounts agency
Jean-Claude Dale

IRSN
IRSN- 06/05 DSU sc

REACTOR SAFETY DIVISION DIAGRAM



ST3C DIAGRAM



ST3C OVERALL MISSIONS

- **Assessment for French Nuclear Safety Authority**
  - **Fuel and Fuel management**
  - **Core and thermal hydraulic accident analyses**
  - **Methods and codes used for safety demonstration**
  - **Post-accidental emergency procedures**
  - **Human reliability used in PSA**
  - **NPP incident analyses**

ST3C OVERALL MISSIONS

- **Core and Thermal hydraulic analyses**
  - **Codes and associated methodologies (CATHARE code, 3D coupling methods, CFD codes, …)**
  - **Support studies for safety assessment**
- **R & D program definition for code and method validation**
- **Simulation activity : SIPA simulator**

Major Accident Prevention Division

Manager
Michel SCHWARZ
☎ 96 89

Assistant Manager
Administration , Finance
Bernard GOUDAL
☎ 95 45

Assistant Manager Simulation
and Research Programmes
Jean-Claude MICAELLI
☎ 96 13

Assistant Manager
Experimental Programmes
Jean-Claude MELIS
☎ 96 09

SEREA
Section Manager
Maria FAURY
☎ 95 15
Experimental Studies and Research on Accidents Department

SIIE
Section Manager
Alain DUBOUCHET
☎ 95 01
Instrumentation and Experimental Engineering Department

SEMCA
Section Manager
François BARRE
☎ 94 15
Fuel in Accident Situations Department

SEMIC
Section Manager
Richard GONZALEZ
☎ 95 42
Fires, corium and Containment Department

Fuel in accident situations department
OVERALL MISSIONS

- **Improvement on the knowledge on advanced and irradiated fuel**
  - **Along the overall cycle**
    - NPP, reactor spent fuel pool, handling, transportation, storage pool
  - **Focus on some accident situations**
    - RIA, LOCA, ...
    - Handling accidents, spent fuel draining accidents, ...
  - **Severe accidents (in vessel part)**
- **R&D programs**
  - **Research activities in close connection to universities**
    - mechanics, thermal hydraulics, metallurgy, material physics, ...
  - **Analysis and interpretation of experimental program**
    - Separate effect experiments; integral experiments (Cabri, Phbus, Halden, ANL, NSSR, ...)
    - involve in experimental program preparation

Fuel in accident situations department
OVERALL MISSIONS (cont'd)

- **Development and validation of IRSN computer codes**
  - **RIA:** SCANAIR
  - **LOCA:** DRACCAR (coupling with CATHARE)
  - **SEVERE accidents:** ICARE (coupling with CATHARE); ASTEC (in vessel part)
- **Validation and use of external computer codes**
  - **Fuel:** METEOR, FRAPCON
  - **Thermalhydraulics:** CATHARE, NEPTUNE
- **Support to Safety analysis divisions (DSR, DSU)**
  - **State of the art**
  - **Extrapolation of results up to reactors geometries**
  - **Reactor transient calculations**
  - **Criteria analysis and developments**
  - **Development of methodologies for code use in reactor safety context**

Fuel in accident situations department

Head of department
F. BARRE

LEC

Head of Laboratory
M. PETIT

-Fuel irradiation, FCI
-RIA; fuel transportation; storage
-Experimental analysis
CABRI, HALDEN, NSSR, …
- Computer code development
SCANAIR, TH2D
- RIA criteria

LEIDC

Head of laboratory
G. REPETTO

- LOCA, spent fuel draining, handling accidents.
-Experimental analysis
PHEBUS, CABRI, HALDEN, ANL, JAEA..
-Computer ode development
DRACCAR
-LOCA criteria

LESAG

Head of laboratory
J. FLEUROT

- Severe accidents
-Experimental analysis
- Computer code development
ICARE/CATHARE; ASTEC
- Participation to PSA level 2

-40 IRSN staff (38 engineers, and scientists)
-10 engineers and scientists from external companies
-11 students (PHD and post-PHD)

R&D
65%

Support
to safety analysis
30%