EMERGENCY PREPAREDNESS AND RESPONSE ORGANISATION

1. Global description
EDF Rapid Nuclear Response Force’s mission

To bring assistance to a site experiencing an accident involving more than one reactor…

… within 12h after mobilization

Fully operational after 24h.

To bring and operate its own mobile equipment to ensure water, compressed air and electricity supply

To bring skilled operators on site in order to help the local shift and possibly take over.

To ensure logistics and technical support (using its own logistic means)
HYPOTHESES

1 site, 6 reactors

Major destruction of infrastructure (access roads)

Total or partial unavailability of local teams

Radiological and chemical hazards
REQUIREMENTS

Complete autonomy for the first 72 hours.

A range of logistical solutions to cover a large scope of situations.

EDF volunteers, part-time workers for NPP (50%-50%).

No use of outsourcing the first 72 hours.
A CORPORATE RESPONSE FOR THE FRENCH FLEET

Headquarters
National base around Paris
4 regional bases on NPP
300 people 4x70 + 25
Accident

GO: FARN triggering
Reconnaissance national team
Alert
Mobilization
Transport to rear base
Transportation team 1
Transportation team 2
Transportation team 3
Transportation team 4

GO+8h : End of reconnaissance
Reconnaissance team + Diagnosis
Transport to rear base
Transportation team 1
Team 1 : mobile equipment deployment for the first 2 units
Team 2 : mobile equipment deployment for the other 2 units
Team 3 : mobile equipment deployment for the other 2 units
Team 4 : rear base implementation and build up

GO+12h : first step on site
Regional teams
Alert
Mobilization
Transportation team 5 to 8

GO+24h : all the devices are plugged and in operation
On site transportation and equipment connection

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Mobilization
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Transportation team 5 to 8

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EMERGENCY PREPAREDNESS AND RESPONSE ORGANISATION

2. Skills
24/7 each Regional Base is able to mobilize:

1 Team for 2 reactors

- 1 leader
- 6 process
- 6 Intervention & Logistic
- 1 RP

+ 3 reconnaissance team from national headquarters

=> 59* off-site EDF volunteers take action within 24h
TRAINING PROGRAM AND DRILL PROGRAM

5 weeks + 4 weeks for driving *

- Priority training
  - * trucks, forklift trucks, crane…

1.5 weeks

- Validation exercise

- Additional training

Staff able to take on call duty

Drill
3. Radio Protection
FARN Organization To Deal With Radiological Situations 1/3

- Radiation protection officers in each team (14 people)

- Specific training delivered to staff: stress management, emergency preparedness …

- Presence of a radiation protection expert to manage response within reconnaissance team and command team.

- Presence of an EDF medic on the rear base within 24 hours.
FARN Organization To Deal With Radiological Situations 2/3

- Preparation
- Advanced HQ FARN (Rear Base)
  - RP characterization
  - ALARA preparation
  - RP briefing of team leaders
ALARA

Intervention

FARN intervention in NPP

Countermeasure defined by HQ implementation

On field radiological measurement

Real time unplanned situation management with HQ
Radiation monitoring and protection

- Robust equipment common to all emergency response personnel (on-site, FARN ...)

- Monitoring of external exposure:
  - Gamma and neutron dosimeters
  - Operational gamma and neutron dosimeters
  - Radiation meters
Environmental monitoring

- Autonomous air samplers assessment of releases into atmosphere.

- Gamma probes broadcasted by satellite release and dose rate monitoring.
Radiation monitoring and protection

- Monitoring of surface contamination and protection against internal exposure
  - Contamination meters
  - Worker protection suit (skin + airways)
FARN RP control and decontamination module

- **Waiting room**
- **Undressing**
- **RP measurement**
- **Medic RP**

**Equipment**

- Banc / chaises
- Material rechange
- Table matériel PCR
- Shower
- Douche
- Armoire

**SAS**

**Génération 420**

Ce document est la propriété d'EDF - Toute diffusion externe du présent document ou des informations qu'il contient est interdite
Exercise program

28 full scope exercises since 2012.

Each exercise with a radiological situation.

For 2017: ability to deal with a large scale radiological situation is one of our priority:

ALARA optimization.

Follow up of dosimetry.

Development of cooperation with INTRA (drones and robots) to assess the situation.
4. Logistics and mobile equipment
Logistics

**Access by airway** : Airbus helicopter EC 225, 3,5T lifting capacity

**Access waterway** : barge, 6T loading capacity
Logistics

Ground access: high motricity trucks
Logistics

REAR BASE
Mobile equipment

Water pump: 10 bar, 90 m3/h, 1T

Water pump: 10 bar, 210 m3/h, 3,5T

Filter with mechanical auto-cleaning device: 100 microns

Water supply
Mobile equipment

Electricity and compressed air supply

Generator: 100 KW, 3.5T

Air Compressor: 7 bar, 24 m3/h, 0.8T