
FRENCH APPROACH TO PROTECTION OF CRITICAL SERVICES

THE NUCLEAR FIELD

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Abstract:

1 INTRODUCTION

The French system of physical protection of nuclear installations is in keeping with the overall planification of the State protection and security. This general planification is based on a double structure. First, there is a National Alert System called “Vigipirate Plan”. This Plan includes different levels of public and private protection measures in order to planify a General State Protection consistent with the level of current threat. Second, a decree, signed in 2006, under the authority of the Prime Minister, aims to protect sectors of critical importance and is applicable to operators as well as public authorities.

As any other sector, the nuclear field is concerned by the warning “Vigipirate” Plan and the specific measures taken regarding the current threats. As a sector of critical importance, it is submitted to a more dedicated risk analysis and to a protection system consistent with threats of reference, including a control process.

1.1 The Vigipirate warning system

The National Warning System is based upon two main implementation principles. First, the threat assessment results in a warning level activation (yellow, orange, red or scarlet) and the setting-up of flexible measures of vigilance, prevention and protection, adapted to threats (RNBC, Cyber, on the ground, in the air or at sea). Then, the public authority recognizes the efficiency of the principle of shared responsibility for security. It implies a permanent security posture and graduated measures which must permeate any kind of essential services to ensure a collective and global response to terrorist threats.

For each level of threat, security goals are associated: from raising awareness and local measures for the yellow level to preventing a risk of major attacks, simultaneous or not, with possibly very restricting measures for scarlet level. Furthermore, for each sector, specific protection measures will also be taken. These measures are flexible and must be the product of a shared responsibility process between operators and public authorities.

Following a threat assessment and in coherence with the level of the Vigipirate warning system, the Prime Minister can decide to activate a Specific Intervention Plan. It can be, as an example, the Piratair Plan for a threat to air transportation, the Piranet Plan for a cyber attack, and for the plan which concerns us today, the RNBC Intervention Plan design to address an RNBC malevolent or terrorist attack.

1.2 The Protection of the critical services

The other side of the French approach to protection is the security of essential services called sectors of critical importance. The 2006 decree, as seen above, aims at building a physical protection system based upon some threats of reference and with regard to the vulnerability of the various facilities of critical importance. A voluntary and collaborative process is really encouraged but a compulsory approach is possible at last resort.

It fundamentally applies to sectors which:

- are essential for the sustainability of the nation's activity ;
- could lead to significant damages to the population or the environment in case of aggression;

The essential sectors are related to State Activities (4); Citizen Needs (3) and Economic and Social Life (5), which includes the Nuclear Energy field.

The whole process is based upon a risk managed and threat driven approach.

Four types of plans are required, each of them addressing a different and specific layer :

- A National Security Directive for every sector (under public authority responsibility) ;
- An Operator's Security Plan ;
- A Special Protection Plan for each point of critical importance ;
- An External Protection Plan jointly produced by the local public authority and the operator for each key asset.

What is the purpose for relying on a "Risk analysis methodology"?

Mainly to allow an efficient use of resources, and then to have a same consistent approach to the logic of protection of vitl areas. We must underline that this methodology requires a strong collaborative process between the government and operators.

Then, what are the duties of the different operators of critical importance?

First, they must appoint their "defence and security delegate" (i.e. their security liaison officers), at the central and local level when they possess both. They must then, elaborate their Operator's Security Plan, taking into account the National Security Directive of their specific sector and their own risk analysis (for the nuclear field, it refers to the Nuclear Sector National Security Directive). Eventually, they have to locate their vital areas and elaborate a Special Protection Plan for each of them.

1.3 The Nuclear Sector

The Nuclear Sector National Security Directive is established under the authority of the Ministry of Energy and aims at setting a security framework and objectives related to some threat scenarios of reference. This list of scenarios, which is a classified document, represents the "Design Basis Threat – DBT" upon which is sized the physical protection. The control, licensing and authorization process for the operation of an essential nuclear installation is mainly based on the respect of the physical protection system regarding the Design Basis Threat.

The Directive draws on two sets of threats scenarios. One of them is related to the theft or diversion of nuclear material and the other one, to sabotage of nuclear facilities. Both of them include the internal and external threat. Then, through a risk analysis, the Directive aims at the definition of security measures based on two principles :

- a graded approach and defence in depth;
- a shared responsibility between the public authorities and the nuclear operators.

This document mainly involves the nuclear power plants and some fuel cycle facilities.

The objectives of the Directive are consistent with the Convention for the Physical Protection of the Nuclear Material and Nuclear Facilities of the International Atomic Energy Agency.

The public authorities are currently working on a regulation for the security of radioactive sources.