
Exercise of the management of a crisis initiated by a malevolent act

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Abstract

In addition to exercises performed in the field of security, it was decided, in agreement with the competent authorities in charge of safety and security to achieve an exercise in the field of safety with a terrorist attack of a nuclear power plant as initiator. The security exercises are in fact primarily designed to test coordination and response of various entities involved in responding to a malicious attack on a nuclear facility, the safety “part” being merely simulated. It was interesting to supplement this approach with an exercise to play the interface between safety and security in which the response - in term of security - would be simulated. The specifics of such an exercise are:

- The initiator of the degradation of the facility safety being malicious, the sequences of equipment failures may be different from those resulting from a classical safety scenario;
- A number of movements and actions on the site are prohibited because of the presence of attackers;
- Treatment time of the threat should be taken into account in assessing the return time of installation in a safe condition.

☒ Moreover, such an exercise should not lead to exchanges of sensitive information (on the threat or on the vulnerability of the facility or its components), it is presented as a series of degraded states of the installation which should be considered.

The first such exercise took place one French NPP November 26, 2009. It is part of nuclear security drills conducted at the request of the ASN.

0 WARNING

This paper is focused on the security aspect in the sense of protection against malicious acts.

1 CONTEXT

The responsibilities of French authorities in terms of control and emergency planning are clearly distributed:

- The Safety authority for nuclear safety supervision;
- The Security authority for nuclear material & facilities security supervision;

- An interministerial Secretary for coordinating and planning exercises (dependent on the Prime minister);
- The Technical Support Body (IRSN) acts to define the scenario, to coordinate the exercise and to assess the results.

Allocation of responsibilities between authorities and operators in terms of action to be taken in case of an attack on a nuclear site are distributed:

- At the operator level: on site response forces (guards)
- At the local authority level: local off site forces and emergency units (Gendarmerie)
- National level: Special Forces (GIGN (SWAT)).

Graded actions are applied corresponding to the analysis of the situation.

For exercises in the field of safety, there is a long experience with initiators such as natural event, failure of components, human behaviour ... They are performed with a limited number of stakeholders.

Concerning the exercises in the field of security (cf. Eurosafe 2005) there is a limited experience with initiator such as a severe attack of nuclear material or nuclear facility by a group of attackers. These exercises involve a larger number of stakeholders with clear allocation of responsibilities (operator, authorities)

This paper presents the first French experience of an exercise merging safety and security concerns.

2 OBJECTIVES

The overall objective of the exercise was to test the expertise and decision circles of the national organization of crisis management.

Points to consider in the exercise were:

- Test the alarm by the operator of the various entities involved and the public;
- Test activation, the manning of PCs and coordination;
- Test coordination between all operators of the site;
- Test the coordination of the various bodies concerned and the overall system;
- Test the overall decision-making chain management of a crisis involving a security event leading to accidental situation;
- To test the sufficiency of all means of communication internally and externally;
- Test the responsiveness of decision making and corresponding actions to initiate;

3 PREPARATION

During the preparation of this exercise, it was decided that the part concerning the response by security forces would be simulated with the exception of the intervention by on site response force. To this end, the colonel of the Gendarmerie of the involved department, the commander of regional law enforcement forces and one officer of the French GIGN (national SWAT team) participated in the management of the crisis as security advisers to the Prefect, who is the authority in charge of the crisis management. The positions, movements and actions of these forces were simulated by these officers.

It was the first time that an exercise of nuclear and radiological emergency under the direction of ASN would have an accidental scenario with the action of a group of attackers as initiator. This exercise presents the double concern of managing safety and security to which State representatives must respond through the global management of the crisis.

Unlike exercises in the field of security the actors involved in security have been scripted and the actors who played safety in real (control room simulator turned on, all the actors of NPP and the national operator command post) been requested. However, the means of first local law enforcement force have been deployed in the first moments of the crisis as a drill.

4 CONSTRAINTS

The main constraints of such exercise are:

- An Increased complexity compared to exercise usually performed in safety;
- The data about : the action of the threat, attack scenarios or physical protection system must allow the exercise performance without confidential section;
- Implementation of a greater number of PCs that standard safety exercise;
- The character "smart" the initiator that adapts to the response of crisis management.

5 SCENARIO (MAIN LINES)

A terrorist group equipped with assault rifles and explosives enters one unit of a nuclear power plant after destroying external power supply transformers and the emergency diesels groups before taking possession of the electrical building (BL). Accesses the ground floor of this building are trapped.

The commando took two hostages in the facility. It hurts one of them trying to escape. This employee has time to alert the security control alarm station before being taken hostage.

The terrorists are hiding with their hostages in the BL they control sensitive areas of the plant and prevent any penetration into the building.

They threaten to blow up essential safety related equipments of the reactor if the response forces intervene.

The level of this aggression requests the response of governmental law enforcement force (Gendarmerie Nationale and bomb disposal expert from Civil Security) acting under the control of administrative authorities.

The Management of this "security" crisis associated with this event was conducted at local and national level by the operator. The emergency plan (PUI) and the contingency plan (PPI) have been activated. The French PIRATOME plan was activated at the departmental level.

From the point of view of plant operation, the action of the attackers causes the loss of offsite and internal power supply sources. The presence of the attackers on site prevents the site restoration actions planned for this situation which causes the loss of means of control the nuclear unit with the depletion of battery backup leading to the loss of power in the nuclear main control room. The local actions on actuators by operators are impossible due to the presence of terrorist on site. Due to the lack of data the operator loses the steam generator

make-up water. The core melting becomes inevitable without the timely action of response forces (SWAT team).

The problem of the authorities is to restore the means of control to avoid a serious accident after the SWAT team intervention.

Because it is the first exercise with an initiator of this type no media pressure has been performed during the exercise.

6 MAIN FINDINGS

- The scenario was executed as planned. A large number of observations have been achieved, some are confidential and no detailed below.

6.1 Activation and coordination of PC

The different cultures of the entities responsible for safety and security can be sources of disagreement or misunderstanding that may have consequences, the vocabulary used with different meanings depending on the interlocutor. For example, after the assault, the GIGN announced "clear position" to account for neutralization of terrorists while operator and even the authorities have interpreted this announcement as the situation returns to normal. In fact all levels was not secure (the presence of other potential aggressors, or access local trapped ...) the operator has sent agents there to restore the necessary means to conduct the installation.

Moreover, the prefect said he would like access to the PC authorities (PCA) is better controlled to avoid confusion and allow the reflection of the authorities. He also suggested that the structure of the PCA has two additional rooms for specialists dedicated to the "security" and "security" in the main hall decision to facilitate the flow of technical information and holding regular information points.

In this regard, various observers have noted the lack of permeability between the two areas.

The management of the PCA was difficult to put in place until the arrival of the Prefect. The security aspect has prevailed in the first instance by the presence of Gendarmerie officers. Nevertheless, the prefect on the advice of safety specialists has gradually taken the measure of the pre-accident conditions. Thereafter, he regularly asked the time remaining before the "dewatering" of the core and operational decisions related to the intervention of specialized units were guided by that time. The interface between the decision-making safety and security was effective as PCA and has functioned well.

6.2 Operating the Crisis Technical Center

6.2.1 Links between safety and security

At the IRSN crisis center the reverse observation can be made, the security dimension of the crisis was not well understood (unavailability of premises due to the presence of attackers or trapping...).

If the "safety" information feedback to the CTC and ASN is very organized, this is not the case for "security" information which an organization remains certainly to implement and test. For example, when the experts of the CTC needed information about local conditions (availability of areas ...) they had no precise data from the PCA and had no means of communication intended to reach him. The CTC had finally joined by phone the PCA after agreement of the ASN.

6.2.2 Management of the crisis

The actors in the management of this crisis and in particular those of the technical crisis center, because of the unprecedented nature of the initiator, were disturbed in their approach. The loss of information (blackout control room) to assess the state of the nuclear unit and the inability to overcome this situation through local actions have greatly embarrassed the assessment cell used to "functional" evaluation of the situation. It seems that much time was lost trying to understand rather than considering what to do.

The feedback of "security" information by the local correspondents was inadequate, approximate and imprecise. The formulation does not allow knowing if the damage was real or if the premises were simply deemed unavailable because unsecured.

6.2.3 Timing and means of intervention

The initial ranking of priorities was unclear.

Difficulties occurred in placing the deployment of the Force because of inaccuracies in areas held by the attackers.

Concerning delays, the first analysis was late according to the beginning of the crisis.

6.3 Coordination of the various bodies involved and the overall system

By scenario, the terrorists were not stopped before they penetrate into the BL.

Coordination between the Local Command Central Station (Safety) and the PCA has required round trips by an officer or by telephone.

The motivations of the terrorists have not been clearly identified in the early hours of the exercise. At this time, the quality of information provided to the PCA was random or inaccurate. Consequently, the decision choices were subjected to successive readjustments.

The concept of recovery of premises should be clarified. Indeed, in such situations the operating instructions and especially the actions to be performed locally (time required for intervention and security, taking into account the possible damage to equipment ...) should be considered by safety experts differently than in the management of the crisis initiated by a non malicious event.

6.4 Global operation of the decision-making chain of crisis management

The means and responsibilities of each functional and operational entity must be analyzed in a «feedback» group. The actors will be represented in order to develop better coordination and ensure consistent management of the crisis and reactive and effective decision making to cope with incidental and malicious events.

It would be desirable that criteria intrusion by hostile elements are coupled with those of the activation of PUI emergency plan to take into account as quickly as possible a joint crisis "safety / security" and that, to allow a certain anticipation in alert times for specialized response units.

6.5 Means of internal and external communication

Exchanging messages between command posts, guards protecting the site and on site response force must be properly trained in the radio and traceability to ensure reliable transmission of information and decision making that result.

Redundant transmission means (fixed telephony, cellular, mobile security, fax, radio network, internet ...) should be provided sufficiently in different PC.

6.6 Reactivity of the decisions and related actions to initiate

Progression and motivations of terrorists in the facility building could not be identified in the early time of the exercise. The collected data (identification and evolution of the threat) were fragmentary or inaccurate by lack of visualization. Consequently, the decision choices were subjected to successive readjustments.

7 CONCLUSION

The general consensus is that exercise has been useful and complementary exercises dedicated to safety only. Scenario based on the actions of a terrorist group against the NPP has placed safety teams face an unusual situation.

The Prefect has received all information necessary for its decision. Nevertheless, differences in culture of safety and security actors and the tightness of the crisis management in each

area have been sources of misunderstanding and constituted a brake on the overall management of the crisis. Mutual awareness of the actors in one area to another is necessary.

In managing such crisis sharing of information between different PCs, concerning safety and security information is absolutely necessary. In particular, the minimum delay needed for recovered zones or areas shall be determined in collaboration between experts in safety and security.

This exercise helped to highlight the elements of strategy such as the need for a rapid processing of the threat for the restoration of the situation.

Other exercises of this kind should be conducted at annual intervals to validate the findings of this first exercise.

Finally, the richness in term of training of the management of such extreme situation by teams of experts and the prefecture is emphasized.