# The integrated Safety-Security training

# of inspector in Switzerland

The benefits of the integrated approach

H. MATTLI

Swiss Federal Nuclear Safety Inspectorate (ENSI)

Brugg, Switzerland

[Hans.mattli@ensi.ch](mailto:Hans.mattli@ensi.ch)

B. STAUFFER

Swiss Federal Nuclear Safety Inspectorate (ENSI)

Brugg, Switzerland

**Abstract**

Inspections is an important tool of the regulator or supervisory authority to verify that a licensee complies with the applicable laws and regulations. With inspections, the actual state is recorded in a systematic manner and compared with the target state. It is therefore obvious that the training of inspectors should also takes place systematically. Inspectors in the field of nuclear security can benefit from the experience of nuclear safety.

The training of future nuclear security inspectors together with the nuclear safety inspectors has many advantages. It has vice-versa also advantage for nuclear safety – the interfaces, similarities, and differences between nuclear safety and nuclear security are made clear and are addressed from scratch.

One of the most important aspects is clear processes for the training of inspectors and, above all, guidance by experienced inspectors. Team inspections in a combination of safety and security inspectors result in a common understanding of the interfaces of nuclear safety and security.

## INTRODUCTION

In Switzerland, the training of inspectors in the nuclear field happens in an integrated manner, namely nuclear safety and nuclear security together. It takes place on-the-job and lasts typically one year. The inspection process of the supervisory authority has a recognized accreditation. Accreditation of the inspection activities according to ISO / IEC 17020 was achieved in 2015 [1].

## Training of new inspectors

At the Swiss regulator, the training of new inspectors is defined in internal processes. The training of the future inspectors includes the following steps:

* Training of the legal bases;
* Training of the inspection process (planning, preparation, execution, reporting);
* Professional training;
* Training of safety culture in the nuclear field (integrated safety and security culture);
* Radiation protection for self-protection;
* Negotiation and interviewing techniques;
* Organization of a nuclear facility;
* Technology of nuclear power plants;
* Plant tours and visits of the safety-relevant systems;
* Participation in inspections as a silent observer;
* Supervised leading of inspections;
* Examination inspections.

The training concludes after the successful examination inspection with the appointment as an inspector by the director general.

## Advantages of an integrated inspector training

From the point of view of nuclear security, the training of future nuclear security inspectors together with the nuclear safety inspectors has many advantages. It has vice-versa also advantage for nuclear safety –the interfaces, similarities, and differences between nuclear safety and nuclear security are made clear and are addressed from scratch.

For example, the well-known issue of the confidentiality of information, which always exists in the area of nuclear security, is addressed at an early stage and ways are shown of how to comply with both transparency and confidentiality.

Through integrated training, the nuclear security inspectors also gain a good and comprehensive under-standing of the systems important to safety in a nuclear installation. These systems are the ones that nuclear security is protecting against sabotage, but to which even the nuclear security inspectors rarely have access. This knowledge is important not only for inspections, but also for all other supervisory activities, in particular for assessments and the issuing of permits for plant modifications.

An important aspect is the training of the integrated safety and security culture. It is also important for the supervising authority to consider the sometimes-conflicting requirements in the areas of nuclear safety and nuclear security when assessing inspection items.

The other advantages of the joint integrated training are:

* Team inspections with nuclear safety and nuclear security inspectors are possible at any time;
* The training of the negotiation and interview technique promotes the more precise data;
* The different disciplines learn from the scratch to work together - not only during inspections, but also during the daily business;
* The quality assurance of the inspection reports is carried out according to the same standards;
* The enforcement of deviations also follows the same rules.

## THE APPROACH of the European Nuclear Security Regulators Association (ENSRA)

In January 2018 the European Nuclear Security Regulators Association ENSRA adopted a compendium of good practices for the inspection of security of nuclear material and facilities [2]. It also describes the profile of an inspector and which training is necessary to successfully perform his duties.

### Profile and background of inspectors

There is no single background for all inspectors. On the contrary, a composition of a group of people coming from the nuclear safety, police, army and industrial sectors makes it possible to benefit from a diversity of skills required to master a field which is highly technical in many respects. Whilst a police officer has competency in the area of security, it is often easier for an engineer to understand the more technical aspects of the field, in particular the industrial processes that ultimately help identify the targets.

The employment of young graduates should not be excluded, provided that they have undergone an adapted training programme. When it meets the organisational needs of the authority, hiring inspectors from other government services makes it possible for the small entities in charge of nuclear security to bring in and develop a true inspection culture.

### Training

Training should as far as possible include in-the-field work and theoretical instruction, without excluding one for the other. Moreover, an emphasis on certain content areas should be considered. The inspector’s rights, responsibility and duties should be addressed first. Training on regulations relating to nuclear security, the protection of sensitive information and training on technical subjects like transport or physical protection should also be viewed very early in the training. Safety principles for facilities may not be a priority in the training programme and has to be considered. A novice inspector should never be sent alone on an inspection; above all, he should first become familiar with the inspection procedures before going into the field.

Training should as far as possible incorporate a mentoring period. New inspectors should take part in several inspections and before they are asked to take responsibility for an inspection on their own. Senior inspectors acknowledged by their peers should tutor them throughout their training period.

## Future improvements

Inspectors for cyber security (who are normally assigned to nuclear security) particularly have to interact with people whose daily business is nuclear safety (e.g. I&C engineers of staff functions). In doing so, they communicate with persons who are not familiar with the mindset of nuclear security, e.g. a malicious act. During training, this problem should be dealt with in more detail.

## Conclusions

Security-safety interface is a decision point where both safety and security issues should be taken into consideration. In this sense it is also appropriate to focus on the training of inspectors of both nuclear safety and nuclear security. A very good tool are team inspections, which provide a deeper insight into the mutually subject matter and take a closer look at the interrelationships.

Important prerequisites are unified inspection processes for both nuclear safety and nuclear security. Experienced inspectors should support new inspectors and should accompany them during on-site inspections. In some cases, the established concepts would benefit from some rethinking. Change and improvement requires good communication and the willingness to understand each other.

References

1. ENSIV Ordinance, Article 2 paragraph 2 of the ENSI ordinance (SR 732.21), 12.11.2008.
2. European Nuclear Security Regulators Association ENSRA, ENSRA report – A compendium of good practices for the inspection of security of nuclear material and facilities, January 2018 Version 3, [www.ensra.org](http://www.ensra.org)