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**Challenges and requirements for technical support to  
nuclear regulatory authority**

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## INTRODUCTION

Undertaking a nuclear power program is a major commitment and requires addressing the nuclear Safety, Security and Safeguards (3Ss) as prerequisites for a high level of nuclear safety.

High levels of nuclear and radiation safety need to be applied, maintained, evaluated and further improved in the time.

For this objective competences and resources are necessary.

Part of this capacity is the availability of Technical Support Organizations (**TSO**) in regulatory and research activities related to nuclear and radiation safety.

## FUNCTIONS & NEEDS OF REGULATORS

The functions and responsibilities of the Nuclear Regulatory Authority are defined by law:

- define safety objectives, principles and criteria issuing regulations and regulatory guidelines;
- implement and manage the licensing activities, related safety evaluation for: siting, design, construction, commissioning and operation of nuclear installation,
- conduct inspection and enforcement during construction and operation of nuclear installation,
- ensure transparency and public information.

## FUNCTIONS & NEEDS OF REGULATORS

The NRA shall have capability to:

- ▶ establish an effective licensing review process,
- ▶ plan the safety review and related objectives,
- ▶ manage the licensing review process and dialog with applicant,
- ▶ establish priorities,
- ▶ coordinate the internal and external working interface,
- ▶ evaluate the results of evaluations,
- ▶ use them in the decision process.

## FUNCTIONS & NEEDS OF REGULATORS

Limitation in human and technical resources, and in experience, can generate the **need for technical support** to NRA from external organization.

### ISSUES:

- How to determine what is effectively needed ?
- How to identify the suitable provider ?
- What requirements (independence, confidentiality, ...) are to be met by the provider?
- How to manage the external support?
- How to use the the external support ?

**MAKING CLEAR** that, although the technical support contributes to the regulatory decision process, ***the final decision remains only in the responsibility of the regulatory authority.***

## FUNCTIONS & NEEDS OF REGULATORS

In new countries embarking on nuclear programs the lack of previous experience in nuclear safety and the ongoing process to build their capacity generate the delicate situation where two needs appear:

1. provide substantial and extensive technical support for licensing review (objectives, requirements, including some managerial support)
2. safeguard the independence of the NRA in its decision making process and its sole responsibility for final regulatory decision

## THE TECHNICAL SUPPORT TO REGULATORS

The experience shows that the technical support to NRA can be more or less systematic depending on the approach of the NRA and its size (resources):

Typical cases:

Case A : in some countries dedicated TSO organizations are supporting regulatory authority on a comprehensive and continuous basis. In this case the support is quite institutional.

Case B : elsewhere the support is identified on a case by case basis (depending on the specific needs of the NRA) and it is provided by external organizations (in some cases foreign organizations) under specific contractual agreement or framework contracts.



## THE TECHNICAL SUPPORT TO REGULATORS

In both Cases A and B the Nuclear Regulatory Authority shall have capability:

- to manage the external technical support
- to define the objectives of the external review support
- to follow the review activity
- to understand the results
- to use them in the regulatory decision process

In new countries it could be necessary to provide support to the NRA in performing the above management activity (respecting the independence of the regulator).

## THE TECHNICAL SUPPORT TO REGULATORS

The capability of a TSO to provide effective technical support relies on:

- experience,
- senior competent experts,
- knowledge of regulatory requirements,
- knowledge of national and international approaches,
- knowledge of roles and responsibilities of regulator and operator,
- capacity to provide support with "regulatory" view and approach,
- reliability and confidentiality.

In addition TSO support is needed also to develop capacities, to provide training and transfer of know-how and analytical tools.

## THE TECHNICAL SUPPORT TO REGULATORS

The request for TSO support to NRA has increased in the last years due to limitation of human resources in NRAs.

Moreover the growing need to support the capacity “building process” in new countries embarking on nuclear energy is requesting technical support for training, review and licensing activity.

These needs have promoted the initiative of the IAEA to develop a **Draft Safety Guide (DS 429)** providing guidance and recommendations to NRAs on how to obtain external technical support and how to use it.

Currently the draft DS 429 is in the process to be sent to MS for comments.

## CHALLENGES AND REQUIREMENTS

- The *modus operandi* and requisites of the TSO support should ensure compliance with requirements of being: independent, competent and timely available.  
This objective deserves due attention and consideration.
- In general the requirement of independence of expert organizations, national or foreign, from potential conflict of interest is a pre-requisite that shall be proved by the TSO company and verified by the NRA.
- The NRA should have available instruments and procedures, which allow prompt activation of the needed technical support avoiding uncertainties and delays that can challenge the schedule of activities or the commitments being taken by NRA.

## CHALLENGES AND REQUIREMENTS

- The effectiveness of the technical support needs to make reference to clear technical and safety requirements, clear understanding of roles and responsibilities of the involved parties, well implemented technical management and effective quality system.
- The experience shows that the effectiveness of the TSO support is better ensured when the technical support is elaborated following a “regulatory approach”, that implies due knowledge of regulatory function and responsibility.
- The TSO organizations shall develop and maintain updated technical knowledge and competence. For that cooperation and networking need to be developed and promoted among TSOs and strengthened at national and international level.

## CHALLENGES AND REQUIREMENTS

- TSOs organizations need financial resources to carry out their activity and to ensure the above mentioned necessary capacity, resources, knowledge (and its updating), international cooperation and participation in research-study activities.
- The access to needed financial resources, if not guaranteed by NRA or other possible way of stable public financing (as it usually happens for dedicated TSO) could represent a challenge considering the non-commercial attitude expected by independent TSO.

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