

## ***IRRS Good Practices***

### **Review and Assessment (Module 6)**

#### ***Generic Issues***

#### **Sweden – Follow-up Mission**

Mission Date: May 2016

##### ***Good Practice***

The Swedish Radiation Safety Authority (SSM) had developed a comprehensive and well-defined set of criteria for assessing the risks involved in different types of uses of radiation sources.

##### ***Observation***

The risk model used by the SSM for assessing risks involved in different types of uses of radiation sources utilised a comprehensive and well-defined set of assessment criteria.

##### ***Basis***

GSR Part 1 (Rev. 1), Req. 24, Para. 4.33, states that “...*The extent of the regulatory control applied shall be commensurate with the radiation risks associated with facilities and activities, in accordance with a graded approach*”.

##### ***IAEA Comments/Highlights***

SSM performed systematic and thorough assessment of risks involved in different types of uses of radiation sources. The assessment was based on a risk model comprising a comprehensive set of assessment criteria considering different radiological consequences (public, worker and patient health, effect on environment and infrastructure), as well as, other consequences such as cost and societal trust in operations with radiation or the supervision of such operations. The probability of events was also considered.

The results of the assessment were used for strategic planning for the different regulatory control processes including inspections and enforcement.

***Good Practice***

Bel V, the technical arm of the Belgium Regulatory Body, had developed and implemented an effective tool, with well-defined criteria applying a graded approach for reviewing safety related modifications, termed “non important modifications.”

***Observation***

In the Belgian regulatory framework, “Non-important modifications” (NIM) for Class I and Class IIA facilities were submitted to Bel V for review and approval in accordance with article 23 of the GRR-2001. Bel V developed a methodology on how a documented and traceable graded approach could be introduced in reviewing the NIM. A tool had been established with well-defined criteria to establish a clear graded approach. A scoring sheet had been developed, with two groups of criteria: importance for safety and complexity of the NIM.

***Basis***

GSR Part 1 Para. 4.33 states that *“Prior to the granting of an authorization, the applicant shall be required to submit a safety assessment [8], which shall be reviewed and assessed by the regulatory body in accordance with clearly specified procedures. The extent of the regulatory control applied shall be commensurate with the radiation risks associated with facilities and activities, in accordance with a graded approach”*.

***IAEA Comments/Highlights***

In the initial IRRS mission held in Belgium in 2013, a recommendation was issued with regard to the regulatory body reviewing its guidance to perform review and assessment of “non important modifications” of class I facilities in order to clearly identify the criteria for a graded approach’. Bel V not only addressed that recommendation, but went further by developing a very effective tool, with well-defined criteria applying a graded approach for reviewing NIM.

This tool used well defined criteria in its application. A scoring sheet had been developed, with two broad groups of criteria i.e. importance for safety and the complexity of the NIM. For each criterion, a score was given. Based on a combination of the scores for the different criteria, the NIM was subdivided in 3 categories, defining the type of review:

- category 1: detailed analysis;
- category 2: some specific aspects would be analysed;
- category 3: no technical analysis needed.

As part of developing this approach ten NIM were selected for benchmarking and the tool was refined appropriately. The approach was fully implemented for NIM submitted by the NPPs. For NIM submitted for other nuclear installations, the suitability of this approach was being investigated.

**Good Practice**

The Indonesian nuclear regulatory body, Badan Pengawas Tenaga Nuklir (BAPETEN), implemented an award system for outstanding performance of licensees for their compliance with the safety requirements. The annual publication of the list of winners on the website would have a positive impact on the promotion of safety culture.

**Observation**

BAPETEN developed an award system, the “BAPETEN Safety and Security Award”, for outstanding safety and security performance. The list of the awardees was published annually on the BAPETEN website. This publicly accessible recognition promoted good performance as well as safety culture.

**Basis**

- (1) GSR Part 3, para. 2.51 *“The principal parties shall promote and maintain safety culture by:  
(h) Providing means by which the organization continually seeks to develop and strengthen its safety culture.”*
- (2) GS-G-1.3, para. 4.37 *“In order to inform the public of the safety of nuclear installations and of the effectiveness of the regulatory body, findings of inspections and regulatory decisions may be made publicly available. The extent to which such information is made publicly available will depend on the legal provisions in the State concerned”.*

**IAEA Comments/Highlights**

BAPETEN developed a mechanism to recognize the contributions of licensees towards fulfilment of radiation safety objectives through issuing an award, the “BAPETEN Safety and Security Award” (or the BAPETEN Award). The licensees were evaluated to produce a Safety and Security Index (SSI), ranging from 0 to 100. Facilities with an SSI of over 95.5 received the BAPETEN Award and the list of awardees was posted on BAPETEN’s B@LIS web page, which could be accessed by the public.

The BAPETEN Award had significant and positive aspects for promotion of the licensees’ safety and security performance and an impact on the safety culture at the level of the radiation facilities and activities.

### **Good Practice**

STUK has implemented a systematic model for continuous overall safety assessment of nuclear facilities which allows it to regularly monitor the licensees' overall safety and take adequate measures based on the results.

### **Observation**

STUK's overall safety assessment for nuclear facilities is an ongoing systematic collection of oversight information and recurring multi-disciplinary meetings resulting in continuous overview of the strengths and weaknesses of these facilities and potential refocusing of and reallocation of resources for the regulatory activities.

### **Basis**

1. GSR Part 1 Requirement 25 states that *“The regulatory body shall review and assess relevant information...to determine whether facilities and activities comply with regulatory requirements and the conditions specified in the authorization [...]”*
2. GSR Part 1 Requirement 26, para. 4.46 states that *“For an integrated safety assessment, the regulatory body shall first organize the results obtained in a systematic manner. It shall then identify trends and conclusions drawn from inspections, from reviews and assessments for operating facilities, and from the conduct of activities where relevant. Feedback information shall be provided to the authorized party. This integrated safety assessment shall be repeated periodically, with account taken of the radiation risks associated with the facility or activity, in accordance with a graded approach”*.

### **IAEA Comments/Highlights**

STUK (Radiation and Nuclear Safety Authority in Finland) systematically collects oversight information from various sources such as resident inspectors, weekly reports, weekly meetings with licensees, results from inspections and reviews, plant changes meetings, events, etc., and process the information so that general conclusions can be drawn on the safety status of the nuclear facilities, the activities of the organisation responsible for the safety of the facility, and any trends. All collected information is located in a specific area in an electronic system, so-called Polarion. The conclusion from each issue is given significance by a traffic light system and trends are evaluated. STUK aims to have a continuous overview of the issues which form the basis for safety assessments of the nuclear facilities performed in connection to licence applications or periodic safety reviews.

Multi-disciplinary overall safety assessment meetings are held every fourth month for a summary safety assessment. Before these meetings, specific further inputs are made such as the review of observations available in the oversight observations database (HAKE) e.g., in relation to organisational issues. This assessment gives STUK a recurring overview of the strengths and weaknesses of a licensee and the results are used for potential refocusing of and reallocation of resources for the regulatory activities.