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60 Years

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Case Study

Develop and maintain a Nuclear Safety Knowledge Management (NSKM) Programme in a Regulatory Body

Group A

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Working Process



Organizational Background

Type:

- National Regulatory Body, 40 years experience

Existing Functions:

- regulatory responsibilities and functions over the existing nuclear facilities and activities (e.g. radiation safety activities and one NPP unit).

Country Situation:

- expand its nuclear power programme and build new units to fulfill emission reduction goals,
- decommission several coal power plants which produce a large proportion of its electricity
- Existence of new medical application

SWOT Analysis

Strength

Internal Factors

- Long experience
- Good reputation
- Good relationship with media
- Availability of some elements of KM
- Educated & well trained senior employees

Weakness

- Regulation is not up-to-date
- No people to handle new practices of nuclear medicine
- Depletion of personnel for media communication
- No NKM program
- Aging of workforce

Opportunity

External Factors

- Government decision
- Higher public support
- New medical practices
- IAEA cooperation

Threat

- HR issues on nuclear engineering field
- New medical practices, complex and equipment are in place
- Less time for knowledge transfer

Case Study Activity

SWOT Analysis

- **Strengths:**
 - The *RB has long experiences* (40 years) in fulfilling its regulatory responsibilities and functions over the existing nuclear facilities and activities (e.g. radiation safety activities and one NPP unit).
 - *Existence* of a revised *nuclear law and regulations* to control the use of the radiation and nuclear activities in the country.
 - The RB has a *good reputation, public acceptance* record and maintains a *good relationship with the media*.
 - *Some elements of a KM programme exist and are effective* (e.g. training, document management, portal)
 - The current *Head of the RB* is a *well-educated nuclear expert with several years of teaching experience* at the university, was a training manager of the Blue River NPP and has a broad understanding of knowledge management issues.

Weakness:

- the *regulations* on nuclear medicine is not *updated*
- Based on ISO 9001 Certification, the *management processes* of the RB *was not updated* in order to fulfill the latest IAEA and ISO requirements.
- The RB doesn't have a KM programme and employees from HR and the training department have limited knowledge of KM tools and techniques and they are not concern about its necessity.
- The communication officer has recently left for retirement and the young expert, who just graduated from university, has no relevant experiences with the media.
- Many of the 185 staff of the regulatory body will be retiring in the next 1-2 years and only 30 new staff will be recruited prior to 3-5 months of their retirements. Overlapping period is very limited to disseminate the knowledge
- Aging of workforce
- No program to avoid the knowledge loss of the retiring personnel
- No staff-retaining program

Case Study Activity

Opportunities:

- The Government decision:
 - to expand its nuclear power programme and build new units to fulfil emission reduction goals,
 - to decommission several coal power plants which produce a large proportion of its electricity.
- Availability of experienced and reputable university which has faculties in mechanical, electrical and civil engineering, as well as Instrumentation and Control (I&C) and a new faculty of nuclear engineering.
- The public acceptance of the nuclear power programme is at about 56 % in the country.
- A medical institution has introduced innovative medical practices and associated new and complex equipment that are using radio-isotopes for treatments.
- The RB is planning to have an IRRS mission in 2018.
- The order from the Government to review the current national legislation and update it according to international safety standards and requirements.
- The government has supported the recruitment of 30 young staff (maximum) to replace those who will be retiring.
- The country is a member of the IAEA and has signed all necessary agreements with the international community

Threats:

- the number of applicants into faculty of nuclear engineering is very limited.
- All nuclear engineers were educated abroad at the supplier country's educational institutions.
- The medical institution that has introduced innovative medical practices and associated new and complex equipment using radio-isotopes for treatments informed the regulator after their introduction.
- Delay the implementation of these new medical practices.
- Recruiting regulatory staff with the relevant knowledge for these practices is a difficult task.
- There will be an overlap of the experienced and new staff of about 3-5 months according to the government instructions. The RB wants to have a one-year overlap.
- Leadership deficiencies in the NPP's (Blue River)

Challenges / Issues

Both threats and weaknesses are the challenges

Requirements / Standards

Identified requirements/standards (both national and international) which the Regulatory Body should follow

Safety standards GSR Part 1 & 2

Safety Guide GSG-3.1

IAEA TECDOC-1510

Risk Assessment

Conduct a high-level knowledge management risk assessment

Refer to the EXCEL Sheet

KM Policy

NSKM is **important** for all **regulatory functions** of review and assessment, authorization, inspection, enforcement and development of regulations and guides.

The RB is committed to implement NSKM **systematically, consistently and continuously and in order** to become a strong organization with excellent organizational performance through:

1. **active participation** of all leaders and employees,
2. use of **information technology**, and
3. **culture** of sharing knowledge

Organizational Background: Needs for Improvement

Improve HRM

Protect critical knowledge

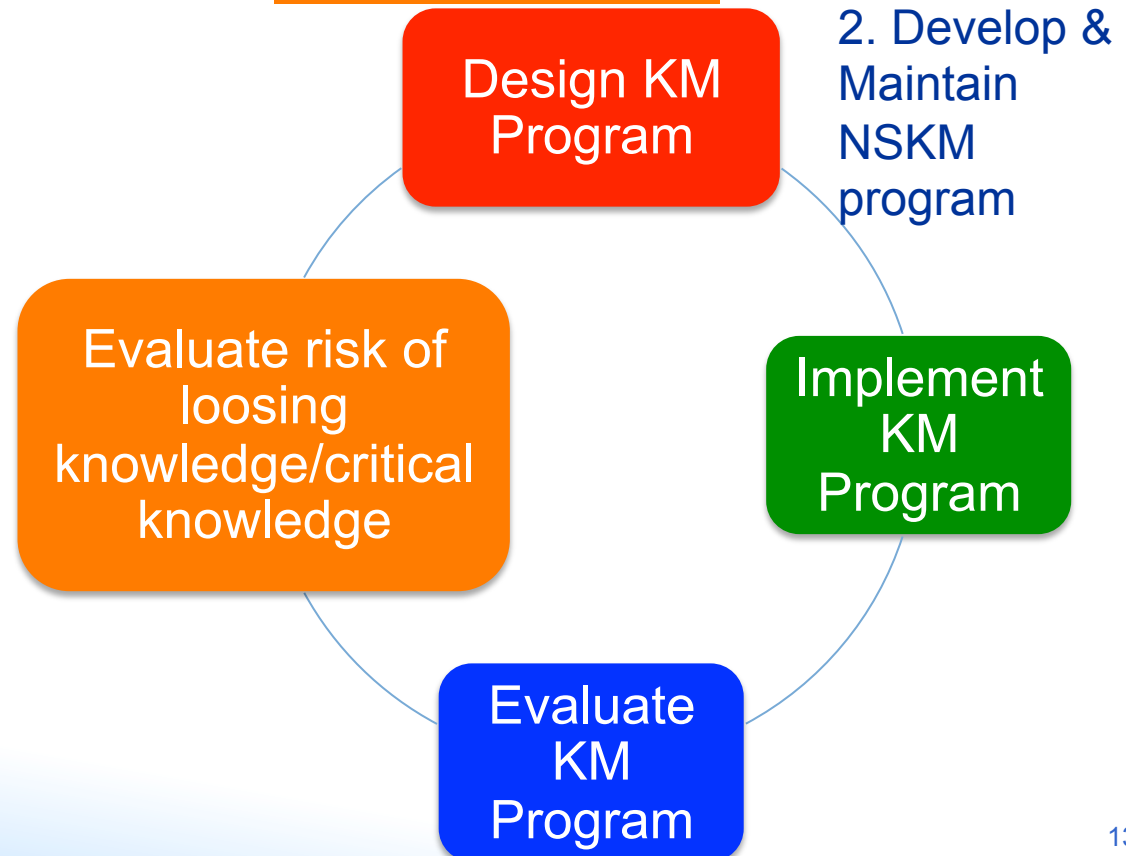
Modernize IT to handle KM

Short-term

1. Handle issues with immediate action

- Regulation is not up-to-date
- No people to handle new practices of nuclear medicine
- Aging of workforce

Medium-/long-term



KM Strategy

Develop a KM strategy including the main milestones of implementation (consider the approval process, stakeholders, communication, change management, etc.).

Refer to the communication plan in Excel Sheet

Lessons Learned

Identify post-feedback elements you would add, update or change to your original policy and/or strategy (to be completed after the presentation of your recommendations)



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Thank you!

