A Glance on the Safety Culture in Industrial Gamma Radiography in the Philippines: Regulatory Body Perspective

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1.0 National Profile of Industrial Gamma Radiography

In the Philippines, there is currently a total of 30 industrial radiography organizations in which 29 are private companies and 1 government institution. Among the 29 companies, 13 are authorized to lease radiographic exposure devices/radiography sources to/from other licensed users and are required to submit a quarterly report on the said regulatory activities. Also, among the 29 companies, 13 have established Quality Management System (QMS) in accordance with ISO 9001 or just aligned to it.

Fig. 1.A Radiographic Exposure Devices (Manufacturer and Model Number)

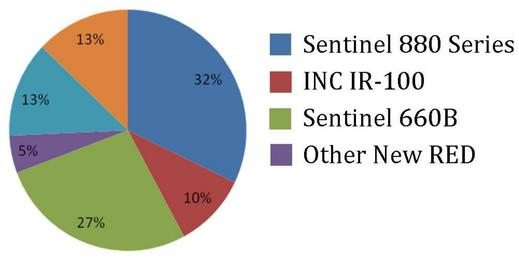
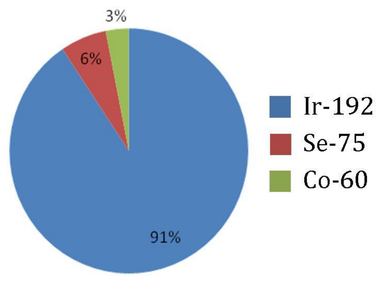


Fig. 1.B Type of Radioactive Sources



Facts: Figure 1. A-B
Descriptive "theme":
. Safety is primary consideration in the allocation of resources.
. Relationship between managers and individuals are built on trust.
Normative "theme":
. Resources allocation should be in line with the stated priorities and goals, strategies, plans and objectives of the organization.
. Personnel should adhere to the management system.
Characteristics of IAEA Safety Culture Framework: Safety is a clearly recognize value, Leadership for safety is clear

2.0 Methodology of the Study

The methodology of the study was mainly based on the IAEA approaches discussed in the draft of the soon to be published Safety Report Series, entitled "*Performing Safety Culture Self-Assessments for Facilities and Activities*". The data gathering tools and technique suggested in the said reference and others, were applied on the following:

a. Conduct of survey using the Safety Culture Perception Questionnaire (SCPQ) survey questionnaire provided by the IAEA;
b. Review of documents, i.e., annual regulatory inspection reports and submitted licensing requirements, were consolidated to come up with an acceptable data for analysis and reliable results within a short period of study; and
c. Walk-through of the facility and observation during the conduct of radiographic operations together with guided interview.

3.0 Analysis of Data

This self-assessment methodology involves two types of information (qualitative and quantitative), in addition it involves two types of analysis (descriptive and normative) as defined by the IAEA. The results from a questionnaire are presented quantitatively as number and graphs while findings from interviews and other methods are presented in descriptive notes. A descriptive analysis is made for the purpose of describing something as it is and creating a clear and valid image of its current state while normative analysis evaluates results or conclusions against a selected standard or norm.

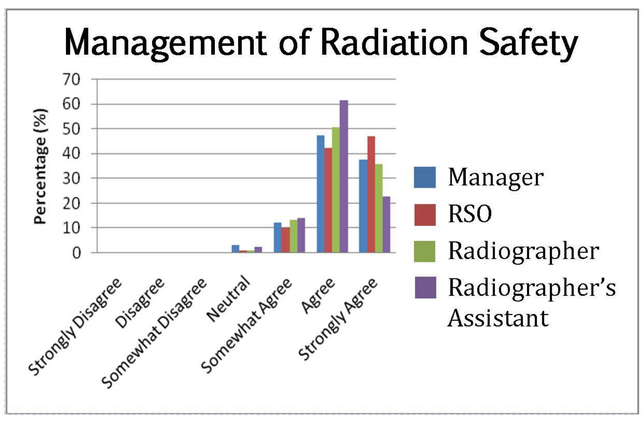


FIG 2. Percentage of Perception on Management of Radiation Safety by Subculture, such as: Managers / Radiation Safety Officers / Radiographers /

3.1 Survey

Facts: Figure 2
Descriptive and normative "theme":
Covered by the 70 attributes answered by the respondents
Characteristics of IAEA Safety Culture framework:
. Safety is clearly recognized value.
. Leadership for safety is clear.
. Accountability for safety is clear.
. Safety is integrated into all activities.
. Safety is learning driven.

Facts: Figures 3. A-D
Descriptive "theme":
. The high priority given to safety is shown in documentation, communication and decision making.
. Commitment to safety is evident at all levels of management.
Normative "theme":
. The safety policy required depending on the type of installation concerned, should be documented and should be communicated to personnel.

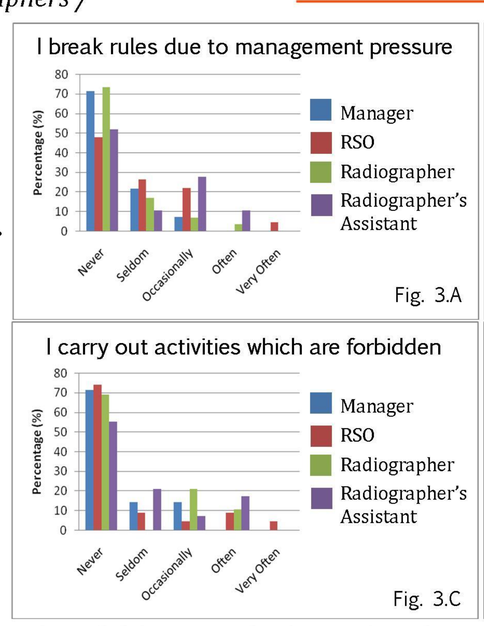


Fig. 3.A

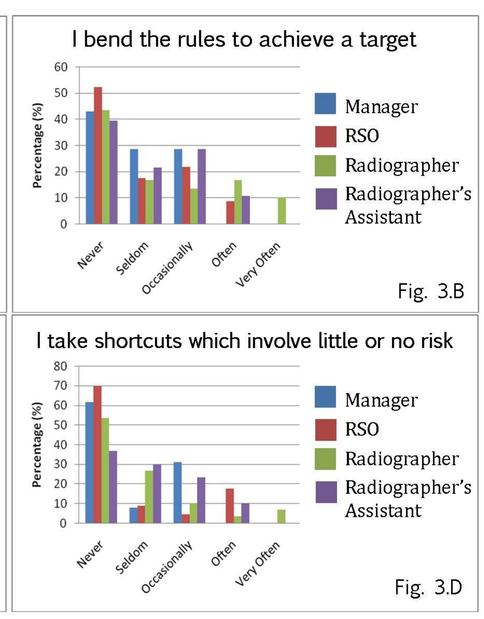


Fig. 3.B

Fig. 3.C

Fig. 3.D

. Decision that affect safety should be made in a timely manner.
. Managers should adhere strictly to policies and procedures in their own conduct and should expect or accept special treatment.
. Managers should not tolerate or ignore substandard performance in relation to safety for any reason.
Characteristics IAEA Safety Culture framework, such as: Safety is a clearly recognized value, Leadership for safety is clear.

3.2 Document Review

Facts: Figure 4
Descriptive "theme":
. There is visible leadership showing the involvement of management in safety related activities.
. An appropriate relationship with the regulatory body exists that ensures that the accountability for safety remains with the licensee.
Normative "theme":
. Managers should be able to recognize conditions of degraded safety (physical or organizational).
. Complete and accurate information be provided to the regulatory body.
. The licensee should be seen by the regulatory body to be open and timely in its reporting and interactions.
Characteristics of IAEA Safety Framework: Accountability for safety is clear, Leadership for safety is clear, Safety is learning driven

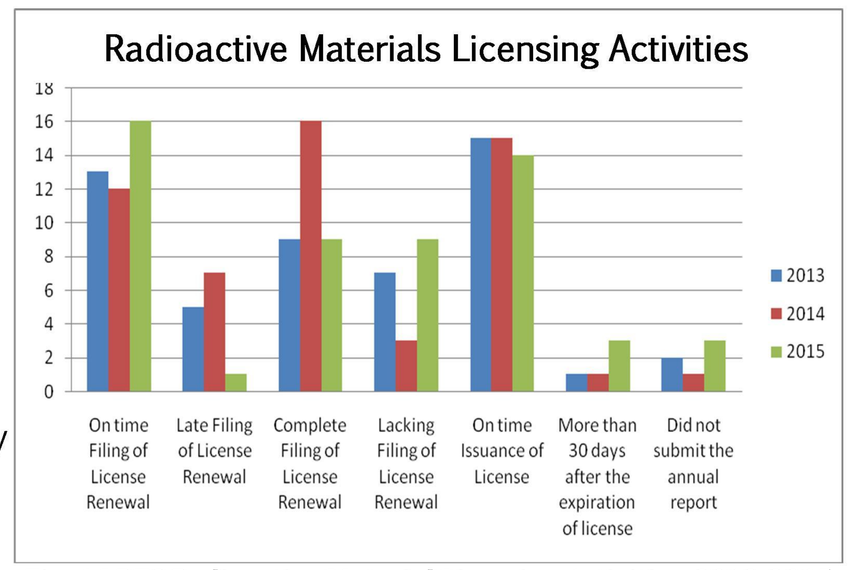


Fig. 4 LRES Radioactive Material Licensing Activities, 2013-2015

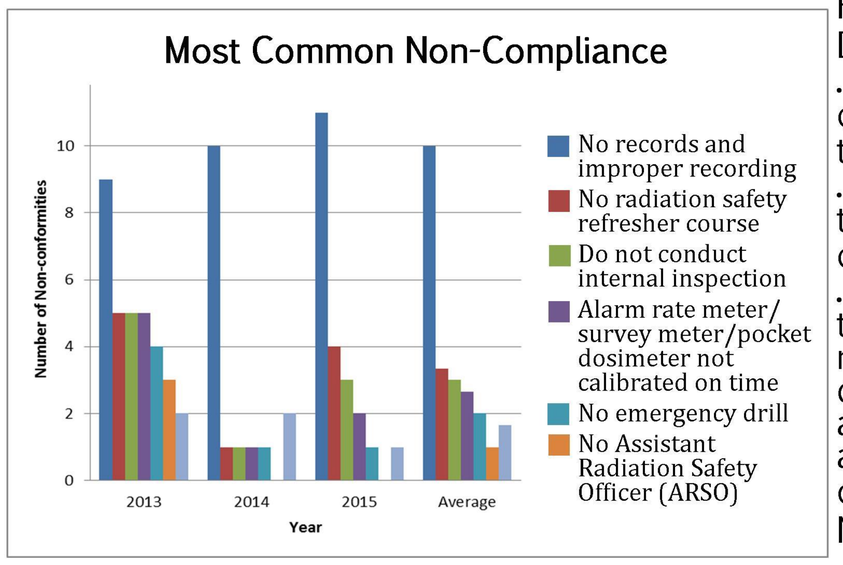


Fig. 5 Most Common Non-compliance

Facts: Figure 5
Descriptive "theme":
. There is high level of compliance with regulations and procedures.
. Management ensures that there are sufficient competent individuals.
. Learning to facilitate through the ability to recognize and diagnose deviations to formulate and implement solutions and monitor the effects of corrective actions.
Normative "theme":
. Personnel should adhere to regulations and procedures and instances of non-compliance must be avoided.
. Managers and supervisors should inspect workplaces frequently to ensure that procedures are being use and being followed in accordance with expectations.
. Personnel should only perform work for which they are trained and qualified
. A systematic approach should be taken to training and qualifications.
. Attendance at training by personnel should be given a high priority.
. There must be low rate of repeat events and errors.
Characteristics of IAEA Safety Culture Framework: Accountability for safety is clear, Leadership for safety is clear, Safety is learning driven

3.3 Observation and Interviews

Facts: The results of walk-through the facility, observations and interviews showed the following: there was a supervisory presence and management commitment, visible good housekeeping program, radiation safety signs are available and equipment are well kept, among others.
Descriptive "theme":
. Senior management is clearly committed to safety.
. Housekeeping and material conditions reflect commitment to excellence.
Normative "theme":
. Senior managers should treat supervisors as a crucial part of the management team as they translate safety culture into practice and should give them their full support.
. Managers should not accept long standing problems with items of equipment, systems or processes as "the way things are".
Characteristics of IAEA Safety Culture Framework: Leadership for safety is clear, Safety is integrated into all activities

4.0 Conclusions and Recommendations

The study showed that based on facts and themes developed in each method of gathering data manifested that the safety culture in the conduct of industrial gamma radiography in the Philippines can be considered adequate. The author believes that he fulfilled the aim of this exercise that is to discover what drives organizational motivation and to identify potential consequences in relation to safety risk, as well as strength. However, a similar but more comprehensive study shall be carried out by a properly well-trained task group, with better preparations, adequate resources and timeframe to address the current limitations and constraints of this study and to fully cover the required respondents using the complete methodology as proposed by the IAEA.

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