



Chair's and Co-Chairs' Summary Report on the

Technical Meeting

Integration of Safety Culture into Regulatory Practices and the Regulatory Decision Making Process

**Jamshed Hashmi, Pakistan
Cornelia Ryser, Switzerland,
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INTERNATIONAL ATOMIC ENERGY AGENCY

Introduction

The IAEA Report on Strengthening Nuclear Regulatory Effectiveness in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant, which was published in 2013, draws on the information from several IAEA activities¹ carried out since 2011 in this area with the aim of strengthening the effectiveness of nuclear regulatory bodies. The Report identifies some of the following lessons learned for strengthening the effectiveness of national regulatory bodies with regard to safety culture:

- Regulatory bodies should consider safety culture in their regulatory processes;
- Regulatory bodies should engage in dialogue with licensees to enhance the understanding of safety culture and seek licensees' commitment to perform self-assessments and independent peer assessments of safety culture;
- The Fukushima Daiichi accident highlighted the importance of regulatory body independence and a regulatory safety culture for effective regulatory oversight of the safety of nuclear installations.

The IAEA, in close collaboration with Member States, is committed to respond to these challenges and share experience and knowledge on the initiatives already taken in the area of safety culture. Countries with established regulatory regimes, as well as those expanding or introducing nuclear power programmes, are looking at new methodologies and tools for safety culture improvement work such as conducting self-assessment, independent assessment and ensuring an adequate oversight of licensees' safety culture programmes.

The IAEA organized a Technical Meeting on Integration of Safety Culture into Regulatory Practices and the Regulatory Decision Making Process at Vienna, Austria on 6-8 October 2014. The purpose of the meeting was to provide an international forum for senior regulators to share knowledge and experience gained in implementing safety culture improvement programmes in their organizations focusing on enhancing safety culture within regulatory bodies and conducting an effective oversight of the licensees' safety culture. The meeting also discussed the important elements of safety culture which need to be considered and integrated into regulatory practices and the regulatory decision making process.

The feedback from this TM and lessons learned will be used for further enhancement of safety performance through culture, leadership and management for safety. The outcome of this meeting will be used in developing further guidance for Member States. The feedback from practical experience from the senior regulators will be incorporated into a new IAEA Technical Document (TECDOC) on Safety Culture in Regulatory Bodies – Good Practices.

About 30 participants, mainly senior regulators from 27 IAEA Member States (MSs), participated in the meeting. The TM was Chaired by Jamshed Hashmi from Pakistan and Co-Chaired by Cornelia Ryser from Switzerland, Lars Axelsson from Sweden, and Spencer C. Brown from UAE. The Chair and Co-Chairs steered the meeting and captured highlights from the presentations and subsequent discussions for incorporation into this meeting report.

Foot note: 1 The Second Extraordinary Meeting of Contracting Parties to the Convention on Nuclear Safety, Vienna, August 2012"; "The Third International Conference on Effective Nuclear Regulatory Systems, Ottawa, April 2013"; "International Experts' Meeting on Human and Organizational Factors in Nuclear Safety in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant (IEM-5), Vienna, May 2013", the Integrated Regulatory Review Service (IRRS) missions conducted since the Fukushima Daiichi accident, and results from other international reviews.

A list of participants and the meeting agenda form Annexes I and II of this report.

The technical meeting was structured into six sessions over three days:

- SESSION 1: Leadership and Management for Safety
- SESSION 2: Organization and Safety Culture and their influence on Management for Safety
- SESSION 3: Improving Safety Culture: Safety Culture Self-Assessment and Independent Assessment
- SESSION 4: Regulatory Oversight of Safety Culture: Regulatory Guidance for Licensees, Interaction with the licensees, interested parties and the public on the progress of safety culture improvement programmes
- SESSION 5: Chain of command and the decision making process
- SESSION 6: Fukushima accident and Safety Culture

Each session comprised of presentations by the IAEA staff and TM participants, followed by question and answer session and discussions on the topics. The presentations are publicly available on the following website created for the TM:

http://gnssn.iaea.org/NSNI/SC/TM_SC_RB/.

At the end of last session, the Co-Chairs provided a brief derived from their observations and some highlights from each day.

Monday 6 October 2014 — Day 1

In the opening remarks, Deputy Director General of the IAEA, Denis Flory reinforced that the Technical Meeting (TM) was organized as part of the Agency's commitment and efforts towards providing senior regulators with a forum for sharing experience on how safety performance can be enhanced through culture, leadership and management for safety. He iterated the UN Secretary General's statement to the IAEA's 58th General Conference, delivered in his name by the UN high representative for disarmament affairs, that:

"The aftermath of the Fukushima Daiichi accident has justifiably continued to dominate the international conversation on nuclear safety. There is a growing recognition that the use of nuclear power requires a strong nuclear safety culture, including the adoption and implementation of effective international safety standards."

He further stressed that the three major nuclear accidents in recent history, Three Mile Island, Chernobyl and Fukushima Daiichi, have revealed that it is not solely the technology that fails when things go wrong. In particular, one of the main lessons learnt from Chernobyl was the importance of a strong safety culture: since 1986 safety culture has been an essential part of nuclear safety.

Adriana Nicic from the IAEA presented IAEA's approach on the Leadership and Management for Safety and talked about history of Safety Culture concept in IAEA Safety Standards. She highlighted some recent conclusions and recommendations from international conferences, seminars and technical and expert meetings and events. She also posed some thought provoking questions to the international nuclear regulatory community to address the issues and challenges in the enhancement of safety culture within the regulatory body and its oversight programme.

The Chairperson Jamshed Hashmi discussed the evolutionary work on safety regulations in Pakistan over the years since the establishment of the independent regulatory body in 2001. He stressed that the independence covers the technical, financial, legal, competence and communication areas and without effective independence, safety culture cannot exist. He was of the view that the leadership derives from a bottom-up approach. Responding to some questions he informed that PNRA identified its core values in 2001, safety culture oversight of the licensees is conducted although it is not mandatory in the regulations, and however, work is in progress for putting it in PNRA regulatory framework.

Abida Khatoon from the IAEA provided an update on Safety Culture initiatives at the IAEA. She informed about the development of training workshop material on safety culture self-assessment under the “Safety Package” and providing this training to Pakistan Nuclear Regulatory Authority for the first time as a pilot study. IAEA is also developing guidelines on the Safety Culture Self-Assessment Process and planning to develop a TECDOC on Safety Culture in Regulatory Bodies. She also mentioned that there is a need for further work on independent assessment for review missions.

The Co-Chair Cornelia Ryser proposed a Systemic Perspective on Safety Culture. She reflected on a systemic approach as applied to the whole system of involved stakeholders, such as operators of nuclear installations, regulatory bodies, vendors, research institutes and international organizations, as well as political institutions, non-governmental organizations, the media and the public. She discussed how these stakeholders influence each other and contribute, based on broader societal values and norms, to a common safety culture of the whole system. She then focused on how regulators impact the operators’ safety culture with their oversight culture and practice. She shared her experience on practical elements of oversight culture of the regulatory body by presenting a project of the Swiss Nuclear Safety Inspectorate (ENSI) on Oversight Culture.

Shahbaz Ali Nasir Bhatti presented improvement in regulatory performance of PNRA by integrating safety culture into regulatory practices and shared his experience in the areas of some core regulatory processes.

Lina Vaitkiene shared her experience on integration of safety culture into the management system of the regulatory body in Lithuania.

Anh Duong presented VARANS’ first steps toward a strong safety culture from the perspective of a newcomer country. She identified that lack of regulations and procedures and competencies are the main challenges in the establishment of strong safety culture in Vietnam, however, she said that commitments of the top leaders and the assistance of the international nuclear community, including the IAEA are strong assets in strengthening safety culture.

Reno Alamsyah presented role of leadership and safety culture in the BAPETEN regulatory decision making process in Indonesia. Regarding improvement in safety performance he emphasized the role of the leader as a decision maker that has the ability to always put safety first, also when difficult decisions need to be made. To illustrate this challenge he shared an example of a regulatory decision (safety re-assessment of research reactor) that lead to the suspension of a license. This ability is important in a country planning for a NPP as it shows commitment to safety and helps develop trust in relation to the public.

Martha Tutu George from Sierra Leone shared her views from a different perspective stating that the legal basis for the regulatory body provides consideration of safety culture in their regulatory decision making processes. She pointed out that the challenge is to communicate to smaller licensees as this is more difficult than communicating to the licensees having larger nuclear program.

Sotirios Economides from Greece identified that patient safety is implicitly (but not explicitly) included in the regulatory body's mandate.

Tuesday 7 October 2014 — Day 2

Monica Haage from the IAEA presented Lessons Learned on Safety Culture in relation to the national nuclear safety infrastructure development. She pointed out that root causes for accidents are not to be found solely in the technology; they are also rooted in the human and organizational constraints. She identified the three roles of the regulator needed to keep a balance for a healthy level of safety culture within the national nuclear infrastructure. She iterated that the lessons learned from the Fukushima Accident and the subsequent International Expert Meeting 5, have shown that safety culture needs to be understood considering a systemic view on the overall national nuclear infrastructure program.

Lars Axelsson shared the experience of the Swedish Regulator in the area of Leadership and Management for Safety. He mentioned that the accidents in the past have “helped” to shift the focus on the importance of human and organizational factors. Safety culture has not attracted senior management specifically when it involves decision makers in the development of safety culture. The challenge is that senior management needs to be reminded of their important role in safety culture.

Adriana Nicic presented IAEA's perspective on Human and Organizational Factors (HOF) and informed that the IAEA safety glossary does not include a definition of HOF. IAEA safety standards covering human and organizational factors are mainly written for operators and not specifically for regulators; in relation to this she posed a question to the audience on whether additional guidance is needed for regulatory oversight of HOF.

André Bouchard presented the Canadian Regulators' perspective on Human and Organizational Factors stating that HOF is considered throughout the regulatory activities of the CNSC in the framework of Safety and Control Area. As an example, Bouchard presented the CNSC's work to ensure Minimum Staff Complement (MSC); a systematic analysis by a multi-disciplinary team is applied to validate MSC. No regulatory requirements regarding safety culture exist as of yet; however, regulatory framework improvement initiatives formalize the integration of HOF through the CNSC's oversight activities. In addition, a regulatory document regarding managing the workers based on inspection findings is under development.

Monica Haage and Abida Khatoon presented IAEA Guidance on Safety Culture Self-Assessment and Independent Assessment. Abida stated that IAEA safety culture self-assessment methodology was implemented at the PNRA in 2013. The regulatory body plays an integral part in shaping the safety culture within an NPP programme. She explained the descriptive and normative framework of analysis and pointed out that safety culture is not a culture; it is a normative interpretation of culture. Monica shared her experience on Safety Culture Independent Assessment through IAEA OSART Missions. Her presentation initiated discussion on the need to consider safety culture assessment as part of independent assessment of regulatory body (e.g. through the IAEA IRRS mission).

Shahbaz Ali Nasir Bhatti identified some of the challenges encountered during the implementation of the IAEA Safety Culture Self-Assessment methodology at PNRA. He pointed out that a good understanding of the concept of safety culture by the team members conducting a safety culture self-assessment as well as time management considering realistic milestones are both crucial for the implementation of methodology. He also mentioned that it is important to be descriptive and not to include one's own thinking during the descriptive

analysis of the data. He further mentioned that strong interaction within the team members is essential for information sharing and with senior management on the progress of the assessment activity. Responding to a question he mentioned that the activity is resource intensive and was conducted with the assistance and support from the IAEA.

André Bouchard presented another presentation “Moving forward with implementing IAEA TECDOC-1707 ‘Regulatory oversight of Safety Culture in Nuclear Installation’ - A work in progress and some lesson learned”. He emphasised that open and transparent consultation is important for CNSC; in this respect it has published a discussion paper providing clear definitions and information on safety culture expectations. The discussion paper solicits early public feedback from the stakeholders which will be considered when developing a REGDOC clarifying requirements and expectations on safety culture for its stakeholders. Stakeholder’s feedback is important to strengthen CNSC regulatory framework.

Diane Sieracki presented the “USNRC Reactor Oversight Process (ROP) and an update on Safety Culture”. She explained that safety culture is incorporated in the ROP through cross-cutting areas and inspection activities. Safety culture is an expectation communicated through the Safety Culture Policy Statement which was published in 2011 in the Federal Register. NRC may issue a Chilling Effect Letter if concerned about licensee’s safety-conscious work environment.

Helen Rycraft from the IAEA presented an eye opening presentation on her work at Sellafield UK, on “Regulatory Oversight of Safety Culture during decommissioning”. Decommissioning is dynamic and challenges the regulatory body when work conditions, organizational structure and workforce change significantly. She explained that during decommissioning, environmental culture needs to be taken into account together with safety culture.

Hernandez Maldonado from Mexico presented “Safety Culture Framework for the Laguna Verde NPP – An outline of the history of the safety culture framework of the Laguna Verde NPP”. The legal framework, activities of the licensee and activities of the regulatory body were presented. Currently, no specific requirement on safety culture is established; however, there are certain procedures in place that deal with ensuring qualified personnel, training, etc.

Tea Zabrcic presented the “Slovenian regulatory approach to Safety Culture” indicating the importance of their periodic safety review which is undertaken every 10 years and includes the topic of safety culture. She mentioned that safety culture is part of the quality management system; however, it is now dealt with as a separate subject. The biggest challenge to overcome is the lack of communication within and outside the regulatory body.

Madalina Tronea presented “Regulatory Oversight of Licensee’s Safety Culture”. Romania initiated a project in 2010 on Enhancement of CNCAN’s capability to assess the Safety Culture of its licensees in response to a recommendation received in 2008 during the peer review to develop dedicated diagnostic tools in order to improve the effectiveness of the regulatory assessment of safety culture. The project identified some measures to improve regulatory activities related to the safety culture oversight and self-assessment of safety culture within the regulatory body.

Ali Nasr presented safety culture from theory to practice – a case study undertaken for enhancement of safety culture in Tunisia. He mentioned that INIR mission preparation is underway and explained how the NPP project conducted a pilot study on four radiotherapy centres on improving safety culture. Some strengths and weaknesses were observed; strength was the willingness and commitment of top management to improve safety culture, while a punitive approach towards reporting of errors was identified as a weak area.

Wednesday 8 October 2014 — Day 3

Spencer Brown presented the FANR, UAE regulatory approach to safety culture and stated that national regulation RG-001 and RG-002 provides for requirements on safety and security culture during siting, design, procurement and construction and for safety culture indicators for monitoring program. REG-24 provides requirements for facilities involving ionizing radiation on fostering and maintaining a strong safety culture as a part of the Management System by the licensees.

Yusri Heni talked about the assessment program for implementation of integration of safety culture into regulatory practices and the decision making process in BAPETEN, Indonesia. She mentioned BAPETEN's publications on safety culture such as the safety culture policy published in 2000, guidelines on safety culture published in 2006 and improvement program in 2011. BAPETEN has adopted IAEA GS-R-3, GS-G-3.1 for implementation of safety culture within an integrated management system. A system for an open reporting of deviations and errors is in place by the licensee and within the regulatory body. The future plan for internal and external assessments of regulatory effectiveness is underway. A safety culture self-assessment of BAPETEN and an IRRS mission are both planned in 2015.

Vaz Mottl presented ARPANSA's challenges in regulatory decisions. Safety culture is currently not included in the legislation; however, regulatory guides issued in 2001 contain guidelines on safety culture. In addition, safety culture was specified as licence conditions for a research reactor in 2006 and in 2014 all facility licences were updated to include a condition on safety culture. This condition requires the licensee to implement a program for continuous improvement of safety culture including regular conduct of independent surveys of the safety climate within the organization. The results of surveys must be provided to the regulatory body. In 2011 ARPANSA adopted safety culture as a part of holistic approach to safety together with human aspects, non-technical skills, defence in depth, management systems, resilience and protective security and nuclear security culture.

Helen Rycraft, IAEA, presented insights on safety culture from the Fukushima accident. She brought out some significant conclusions from the IEM 5 on Human and Organisational factors in Nuclear Safety in the light of the accident at the Fukushima Daiichi Nuclear Power plant held in Vienna in 2013. Some common themes were identified: influence of regulator on the licensee's safety culture; leadership and safety culture to be developed in the Regulator Oversight Program; a need for competence in ITO and behavioural sciences within the regulatory body; discussions on how the management system supports the desired safety outcomes through a systemic approach; discussions on how to cope with the unexpected, particularly beyond design base (BDB). She emphasised the need for a paradigm shift in how accidents are viewed – going from seeing accidents as caused by 'deviations from a perfect system' to focusing on the need to prepare for the unexpected by focusing on the ability to adapt and ensure flexibility within the system, i.e. resilience in the face of extraordinary circumstances.

Hiroko Koike presented regulatory implications of the Fukushima accident on safety culture in Japan and discussed some lessons learned from the accident. Typical findings from the accident investigation reports identified defective or fragile safety culture in both the regulatory bodies and operator. According to the reports, the regulator and the operator together looked for points of compromise in the regulations and 'regulatory capture'—a situation that is inconsistent with a strong safety culture—was present: The operators and the regulator shared a common understanding of ensuring that the operations of existing reactors would not be impacted negatively by lawsuits and thus failed to give priority to safety by instead prioritizing lawsuit avoidance. Similarly, creating any risk of shutdowns of existing

reactors by adopting new regulations was considered taboo. Future undertakings by the regulator include increased oversight of operator's safety culture and internal safety culture.

Elsa Gisquet from France presented a very comprehensive analysis on the "Fukushima Accident Response and Safety Culture" and explained how leadership and safety culture considerations in regulatory processes and decision making are involved in managing accidents and their consequences. She presented a study which unfolded the sequences of the crisis at Fukushima Daiichi, particularly in the early stages, and draws lessons for safety culture from the decisions and actions taken by decision makers.

Spencer Brown led a dialogue session with the participants on elements of safety culture to be defined for regulatory processes and methodology and implementation for self-assessment.

Recap from the Co- Chair from Days 1, 2 and 3 provided some Conclusions as presented below:

Conclusions

Following are the conclusions drawn from the work presented by the experts and participants, including the discussions held during the Technical Meeting:

- a. The TM provided an opportunity for regulators, from different countries regulating a wide range from small radiation facilities to a large nuclear power program, to share their diverse experience on integrating safety culture into regulatory practices and the regulatory decision making process. There is a growing interest on the importance of safety culture by both for countries embarking on nuclear power program as well as for those regulating only radiation facilities observing that **frequency of accidents involving radiation sources is higher than those happening at nuclear facilities**.
- b. A common understanding and awareness was observed on **regulators' dual role – oversight of the licensees' safety culture and the regulatory body's internal safety culture and its impact on the licensee's safety culture**. A pro-active role of the regulatory body in promoting and fostering safety culture of the licensee through its regulatory activities, in addition to legal mandate, taking into account the «Intangible» aspects of culture: values, attitudes, basic assumptions in regulatory practices/processes need to addressed in future;
- c. International experts on safety culture concluded that significant progress has been made on the topic during the last two to three years, the concept of safety culture started in the past as focusing only on the operator/licensee safety culture and today there is a growing interest and awareness of safety culture by regulatory bodies. It is envisaged that for considering the safety culture of the entire nuclear system, it would be essential to take into account **inter-organizational safety culture** including for example suppliers and vendors during all phases of the **lifecycle starting from siting to decommissioning**, thereby looking at safety culture from an overall perspective and moving towards a **"systemic view of safety culture"**.
- d. It was further observed that safety culture continuous improvement is a big challenge for all regulators, specifically the newcomers who start from the beginning by establishing a management system and integrating measures to continuously strengthen safety culture into this system. It was concluded that further work needs to be initiated in collaboration with the **Member States and the Agency to address these challenges** and develop guidance and collaboration to help each other not only on progress and improvement but to move forward into a new phase that is

integrating safety culture into regulatory practices and the decision making process.

- e. Another concept of safety culture was discussed, specifically the **holistic approach to safety** together with human and organizational factors aspects, non-technical skills, defence in depth, management systems, resilience and protective security and nuclear security culture.
- f. **Interrelations of all stakeholders** during all phases of the lifecycle for nuclear and radiation facilities (starting from siting, design, construction, commissioning, operation and decommissioning) and a **need to foster an international exchange among stakeholders through dialogue** was also highlighted;
- g. Taking into account that safety culture became an important topic after the Fukushima Daiichi accident, the participants of the Technical Meeting observed that extensive activities and projects on safety culture are in progress in many countries and it is now a concrete “topic”. With this, the questions arise, is it going to be a **“regular” topic for future?** and **what should be done to address this?**
- h. The participants questioned if the growing interest for this topic is **long-term** and would like to ensure it reflects the global interest and awareness in the **whole nuclear industry**.

Future Work

Based on the discussions and conclusion drawn from the technical meeting the following topics were identified to be considered as an input for future work to be done by the Member States and the IAEA:

- a. IAEA to encourage Member States to undertake Safety Culture Self–Assessment Training Course for conducting self-assessment within the regulatory body and performing the oversight of licensee’s safety culture through national and regional workshops;
- b. IAEA to collect all the current practices adopted by different regulators in promoting safety culture and conducting self-assessment (TECDOC);
- c. IAEA to provide guidance on Independent assessment on safety culture for regulatory bodies specifically during the IRRS Missions;
- d. Develop training courses for the inspectors to conduct licensee’s oversight for management system and safety culture, taking into account corporate headquarters of the licensees to be included in the safety culture assessment process.
- e. Guidance document on Integration of regulatory body’s safety culture into existing management systems and into regulatory practices and decision making;
- f. IAEA to support coordination and Member States efforts for addressing the change of current practices, values, attitudes national approaches to integrate safety culture concepts into the regulatory framework and going forward to self-reflection and self-scrutiny and avoid complacency and maintain constant vigilance;
- g. IAEA guidance on applying a “systemic” approach to safety culture, working to understand the system’s dynamic, non-linear interdependencies as a whole;

- h. IAEA to provide an opportunity to look at interrelations of all stakeholders to foster the international exchange among stakeholders through dialogue and promoting the inter-organizational safety culture;
- i. IAEA assistance and guidance to engage all stakeholders to facilitate interaction at international level and provide collaboration through networking, conferences etc.;
- a. IAEA to support further examination into safety culture during decommissioning taking into account regulatory challenges, human and organizational factors challenges, conflicting goals such as environmental, safety etc. to keep consistency;
- b. Member States to address the challenges for leadership for safety to foster a strong safety culture, e.g. in countries embarking on nuclear power program;
- c. Assistance from the IAEA would be beneficial in the area of developing Safety Culture Performance Indicators which should be meaningful and valid and supplement “expert judgment”.
- d. It was highlighted that safety culture may be considered as a standalone element for Periodic Safety Review in the future revision of SSG- 25

Annexure I

Technical Meeting Participants

No	First Name	Last Name	Country	Organization	Email
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International Atomic Energy Agency Technical Meeting on

Integration of Safety Culture into Regulatory Practices and the Regulatory Decision Making Process

6-8 October 2014

**Conference Room: Board Room D (on the 4th floor of the C Building)
IAEA Headquarters, Vienna, Austria**

Day 1: Monday, 6 October 2014

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| 09:30 - 09:45 | Opening remarks: IAEA DDG, Chairperson (<i>Jamshed HASHMI, Pakistan</i>) |
| 09:45 – 10:00 | Nomination of Co-Chairpersons
Introduction of the Participants |
| SESSION 1: | Leadership and Management for Safety Co-Chair (<i>Cornelia RYSER, Switzerland</i>) |
| 10:00 – 10:30 | IAEA presentations: Leadership and Management for Safety- GSR Part 1, GSR 3 & GSR Part 2. (<i>Adriana NICIC, IAEA</i>) |
| 10:30 – 11:00 | Leadership and Safety Culture- Chair's experience (<i>Jamshed HASHMI, Pakistan</i>) |
| 11:00 – 11:30 | Coffee Break |
| 11:30 – 12:00 | IAEA presentations: An update on Safety Culture initiatives at the IAEA (<i>Abida KHATOON, IAEA</i>)

(Regulatory Body Safety Culture and SCSA) |
| 12:00 – 13:30 | Lunch break |
| 13:30 – 17:30 | Participants |
| 13:30 – 14:00 | A Systemic Perspective on Safety Culture – ENSI's Project on Oversight Culture (<i>Cornelia RYSER, Switzerland</i>) |
| 14:00 – 14:30 | Improvement in regulatory performance by Integrating Safety culture into regulatory practices (<i>Shahbaz Ali Nasir BHATTI, PNRA Pakistan</i>) |
| 14:30 – 15:00 | Integration of safety culture into Management System of Regulatory Body (<i>Lina VAITKIENE, Lithuania</i>) |
| 15:00 - 15:30 | Coffee Break |
| 15:30 – 16:00 | The first steps of VARANS toward a strong safety culture

(<i>Hong Anh DUONG, Viet Nam</i>) |
| 16:00 – 16:30 | Role of Leadership and Safety Culture in the Regulatory Decision Making Process of BAPETEN (<i>Reno ALAMSYAH, Indonesia</i>) |
| 16:30 – 17:00 | Integration of safety culture into regulatory decision making process in Nuclear and Radiation Safety Authority of Sierra Leone - (<i>Martha Tutu GEORGE, Sierra Leone</i>) |
| 17:00 – 17:30 | Integration of safety culture into regulatory practices and decision making process- The Greek Atomic Energy Commission experience (<i>Sotirios ECONOMIDES, Greece</i>) |

Day 2: Tuesday, 7 October 2014

SESSION 2: Organization and Safety Culture and their influence on Management for Safety

Co-Chair (Lars AXELSSON, Sweden)

(Scarlett IHLAU, IAEA support)

09:00 – 09:30 **IAEA presentations:** Lessons learnt about safety culture in relation to the national nuclear safety infrastructure (*Monica HAAGE, IAEA*)

09:30 – 10:00 Leadership and Management for Safety – An example from the Swedish Regulator (*Lars AXELSSON, Sweden*)

10:00 – 10:30 **IAEA presentations:** IAEA perspective on Human and Organizational Factors. (*Adriana NICIC, IAEA*)

10:30 – 11:00 Canadian perspective on Human and Organizational Factors (*André BOUCHARD, CNSC Canada*)

11:00 – 11:30 Coffee Break

SESSION 3: Improving Safety Culture: Safety Culture Self-Assessment and Independent Assessment

11:30 – 12:00 **IAEA presentations:** IAEA Guidance on Safety Culture Self-Assessment and Independent Assessment (*OSART-ISCA-Monica HAAGE /Abida KHATOON, IAEA*)

12:00 – 12:30 Challenges in the Implementation of Safety Culture Improvement Programme (*Shahbaz Ali Nasir BHATTI, Pakistan*)

12:30 – 13:30 Lunch break

SESSION 4: Regulatory Oversight of Safety Culture: Regulatory Guidance for Licensees, Interaction with the licensees, interested parties and the public on the progress of safety culture improvement programmes

13:30 – 14:00 Moving forward with implementing IAEA TECDOC-1707 “Regulatory oversight of Safety Culture in Nuclear Installation” - A work in progress and some lesson learned (*André BOUCHARD, CNSC Canada*)

14:00 – 14:30 USNRC Reactor Oversight Process and an update on Safety Culture (*Diane SIERACKI, USNRC, USA*)

14:30 – 15:00 **IAEA presentations:** Regulatory Oversight of Safety Culture during decommissioning of nuclear facilities- (*Helen RYCRAFT, IAEA*)

15:00 – 15:30 Coffee Break

15:30 – 16:00 Safety Culture Framework for the Laguna Verde NPP (*Antonio HERNANDEZ MALDONADO, Mexico*)

16:00 – 16:30 Regulatory approach to Safety Culture – (*Tea BILIC ZABRIC, Slovenia*)

16:30 – 17:00 Regulatory Oversight of Licensee’s Safety Culture (*Madalina TRONEA, Romania*)

17:00 – 17:30 Safety culture from theory to practice: Tunisia as a case study (*Ali NASR, Tunisia*)

Day 3: Wednesday, 8 October 2014

SESSION 5:	Chain of command and the decision making process <i>Co-Chair</i> (Spencer BROWN, UAE) (Birgitte SKARBO, IAEA support)
09:00 – 09:30	FANR Regulatory approach to Safety Culture (Spencer BROWN, UAE)
09:30 – 10:00	Assessment of the Implementation of the Integration of Safety Culture into regulatory practices and decision making process in BAPETEN (Yusri Heni Nurwidi ASTUTI, Indonesia)
10:00 – 10:30	ARPANSA's challenges in regulatory decisions (Vaz MOTTIL, Australia)
10:30 – 11:00	Coffee Break
11:00 – 11:30	Safety Culture Oversight Framework: Korea's Approach and Current Status (Su Jin JUNG, Korea)
11:00 – 12:30	DIALOGUE: Spencer BROWN, UAE (to lead the dialogue) a. Elements of Safety Culture to be defined for Regulatory Processes b. Methodology to be Adopted for Self-Assessment c. Implementation including resources and priorities d. Independent Assessment
12:30 – 13:30	Lunch Break
SESSION 6:	Fukushima accident and Safety Culture
13:30 – 13:45	IAEA presentations: Fukushima accident and Safety Culture (Helen RYCRAFT, IAEA)
13:45 – 14:15	Regulatory implications of the Fukushima accident on Safety Culture (Hiroko KOIKE, Japan)
14:15 – 14:45	Fukushima Accident Response and Safety Culture (Elsa GISQUET, France)
14:45 – 15:00	Recap from the TM (Co- Chair from Days 1, 2 & 3)
15:00 – 15:30	Coffee Break
15:30 – 16:30	Recap from the TM cont.
16:30 – 17:00	Closing remarks: Chairperson IAEA Adriana NICIC