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Co-Chair Conclusions for Parallel Technical Session IV-B

Influence of Culture on the Management for Safety

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This parallel session included presentations from experts from regulatory bodies, operating organizations and others that led to discussions in a very open and collaborative atmosphere. I would like to thank all participants for their valuable contributions.

The main conclusions from the technical exchanges during this session can be summarized as follows.

Accidents in different domains have been shown to have common factors. Nuclear energy poses unique risks which create special responsibilities for the operator and regulatory body; however the systemic root causes of nuclear accidents share much in common with other industries and the nuclear industry can and should learn from experience in other high reliability industries in addition to nuclear such as oil and gas, petrochemicals, aviation, etc.

The IAEA should provide training and publications on the anatomy of real accidents to illustrate the interactions between the human, organisational and technological aspects that cause accidents. It is also important to highlight the different entities that comprise 'the national nuclear system' and their interactions such as government, regulator, companies, and individual workers.

Leadership and management for safety is important. Managers often say after an accident they did not know what was going on, but their job is to know what is going on.

National culture is a factor that may shape nuclear safety culture. In some cases, safety culture in nuclear organisations appears to transcend national culture. In other cases national culture appears to influence safety culture. Safety culture assessments should consider the influence of national cultural traits. The IAEA is encouraged to support self-assessments of national cultural influences of safety management.

The application of expertise in human and organizational factors needs to be recognised as an important resource to contribute to a systemic safety approach to nuclear safety. Many organisations lack a good balance between technical and behavioural science skills. IAEA is encouraged to assist in clarifying the competencies required by regulatory bodies and operators in the domain of behavioural and organisational science.

IAEA should include in safety standards requirements and guidance for the use of human and organisational competence to optimise safety of facilities and activities in normal and accident situations. To the extent practicable, the standards should use common terms and definitions for ITO concepts.

Operating experience is an important source of learning. The effectiveness of the learning loop needs to

be scrutinised in the light of research. Currently the focus of organisational learning is on reacting to problems and events; however, an approach of identifying and replicating strengths and success factors should also be considered to create resilience capabilities for unexpected situations.

Regulatory bodies should undertake assessments of safety culture within their own organisations in order to improve the effectiveness of their organisation's performance and to assist reflection on their relationship and interaction with the licensees. The IAEA is encouraged to hold a technical meeting to share experiences on regulatory body safety culture assessments.

The IAEA should continue to develop guidance on effective methods for oversight of safety culture in operating organisations. The document should include examples of good practices implemented by other regulators.

Responsibilities for incident command and advisory roles in a crisis situation or an accident involving a nuclear facility follow various models in different organisations. Clear roles and responsibilities and decision-making in critical situations are of key importance for safety and need to be predefined. More knowledge is needed of the strengths and weaknesses of different models. The IAEA is encouraged to develop guidance on effective crisis management with special focus on ITO aspects. This guidance should be developed taking account of the relevant competencies.

Recent research in the areas of High Reliability Organizations should be integrated into methods and standards for practical application.