Thoughts on Safety Culture from a CSNI Perspective

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Some History

- INSAG may have first raised the issue of safety culture as a potential concern following the Chernobyl Accident in 1986.
- At the first Regulatory Information Conference in April, 1989, Tom Murley, Director of the NRC's Office of Nuclear Reactor Regulation spoke on the importance of safety culture at nuclear plants.
- His presentation, "Developing a Safety Culture," is documented in NUREG/CP-0102, Vol. 1 (Proceedings of the US Nuclear Regulatory Commission – NRC Regulatory Information Conference).

What are the Concerns Regarding Safety Culture? (Murley's Plant A vs. Plant B)

- Well-trained staff
- Plant-specific simulator
- Staff rigorously follows procedures
- Fully staffed
- Very little overtime
- Good nuclear work ethic
- Professional decorum in control room
- Scrams extremely rare
- Diligent, probing PORC
- Good preventive maintenance
- Shut down to fix safety systems
- Low maintenance backlog
- Equipment repaired immediately
- Clean plant
- Systems engineers onsite

- Poorly trained staff
- No plant-specific simulator
- Staff doesn't use procedures
- Many management and staff vacancies
- Routine use of high overtime
- Fossil plant culture
- Noisy, undisciplined control room
- Frequent scrams
- Ineffective, pro forma PORC
- Run equipment until it breaks
- Routinely operate in LCO action statements
- High maintenance backlog
- Equipment out of service for long periods
- Many high radiation areas
- No engineering site presence

CSNI General Contribution

- CSNI supports safety research in the broad range of technical areas required to ensure safety of nuclear installations
- Members of the CSNI represent regulators, technical support organizations (TSOs), researchers and operators, providing a broad perspective on nuclear safety issues
- CSNI serves as a source of safety knowledge that reinforces aspects of safety culture such as technical competence and continuous learning

WGHOF

- CSNI activities on safety culture led by the Working Group on Human and Organizational Factors (WGHOF)
- Mission of WGHOF
  - To improve the understanding and treatment of human and organisational factors within the nuclear industry in order to support the continued **safety performance** of nuclear installations and improve the effectiveness of **regulatory practices** in member countries.
- Composition of the group
  - HOF experts (22 countries represented)
  - Regulators, TSO, Researchers, Operators
  - Representatives of: Halden Project, IAEA, EU

WGHOF Past Products

- Primary focus has been safety culture of operating organizations, and best practises for providing oversight:
  - NEA/CSNI/R(2012)13 – Oversight and Influencing of Leadership and Management for Safety, Including Safety Culture
  - NEA/CSNI/R(2008)10 – Maintaining Oversight of Licensee Safety Culture – Methods and Approaches
  - NEA/CSNI/R(2006)1 – State-of-the-Art Report on Systematic Approaches to Safety Management

WGHOF – Post-Fukushima

- An area for lessons-learnt from Fukushima is human and organizational performance, with two areas identified by the CNRA's STG-Fukushima
- Human performance under extreme conditions:
  - WGHOF has produced a report summarizing good practises and areas for further work
- Safety Culture:
  - National characteristics – WGHOF has discussed influences of national characteristics on Safety Culture, but has not identified any follow-up tasks
  - Regulatory Body – WGHOF participating in the CNRA STG on Safety Culture of the Regulatory Body

Conclusions

- CSNI supports aspects of regulatory-body safety culture such as technical competence and continuous learning
- Safety Culture is an important element of the CSNI/WGHOF programme of work – although the focus has tended to be on operating organizations
- WGHOF is well positioned to follow-up on any technical gaps related to Safety Culture of the Regulatory Body