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.

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

<table>
<thead>
<tr>
<th>Plant A: Well-trained staff</th>
<th>Plant B: Poorly trained staff</th>
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<tbody>
<tr>
<td>- Plant-specific simulator</td>
<td>- No plant-specific simulator</td>
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<tr>
<td>- Staff rigorously follows procedures</td>
<td>- Staff doesn't use procedures</td>
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<tr>
<td>- Fully staffed</td>
<td>- Many management and staff vacancies</td>
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<tr>
<td>- Very little overtime</td>
<td>- Routine use of high overtime</td>
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<tr>
<td>- Good nuclear work ethic</td>
<td>- Fossil plant culture</td>
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<tr>
<td>- Professional decorum in control room</td>
<td>- Noisy, undisciplined control room</td>
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<td>- Scrams extremely rare</td>
<td>- Frequent scrams</td>
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<td>- Diligent, probing PORC</td>
<td>- Ineffective, pro forma PORC</td>
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<tr>
<td>- Good preventive maintenance</td>
<td>- Run equipment until it breaks</td>
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<tr>
<td>- Shut down to fix safety systems</td>
<td>- Routinely operate in LCO action statements</td>
</tr>
<tr>
<td>- Low maintenance backlog</td>
<td>- High maintenance backlog</td>
</tr>
<tr>
<td>- Equipment repaired immediately</td>
<td>- Equipment out of service for long periods</td>
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<tr>
<td>- Clean plant</td>
<td>- Many high radiation areas</td>
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<tr>
<td>- Systems engineers onsite</td>
<td>- No engineering site presence</td>
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</table>
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 practices for providing oversight:
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