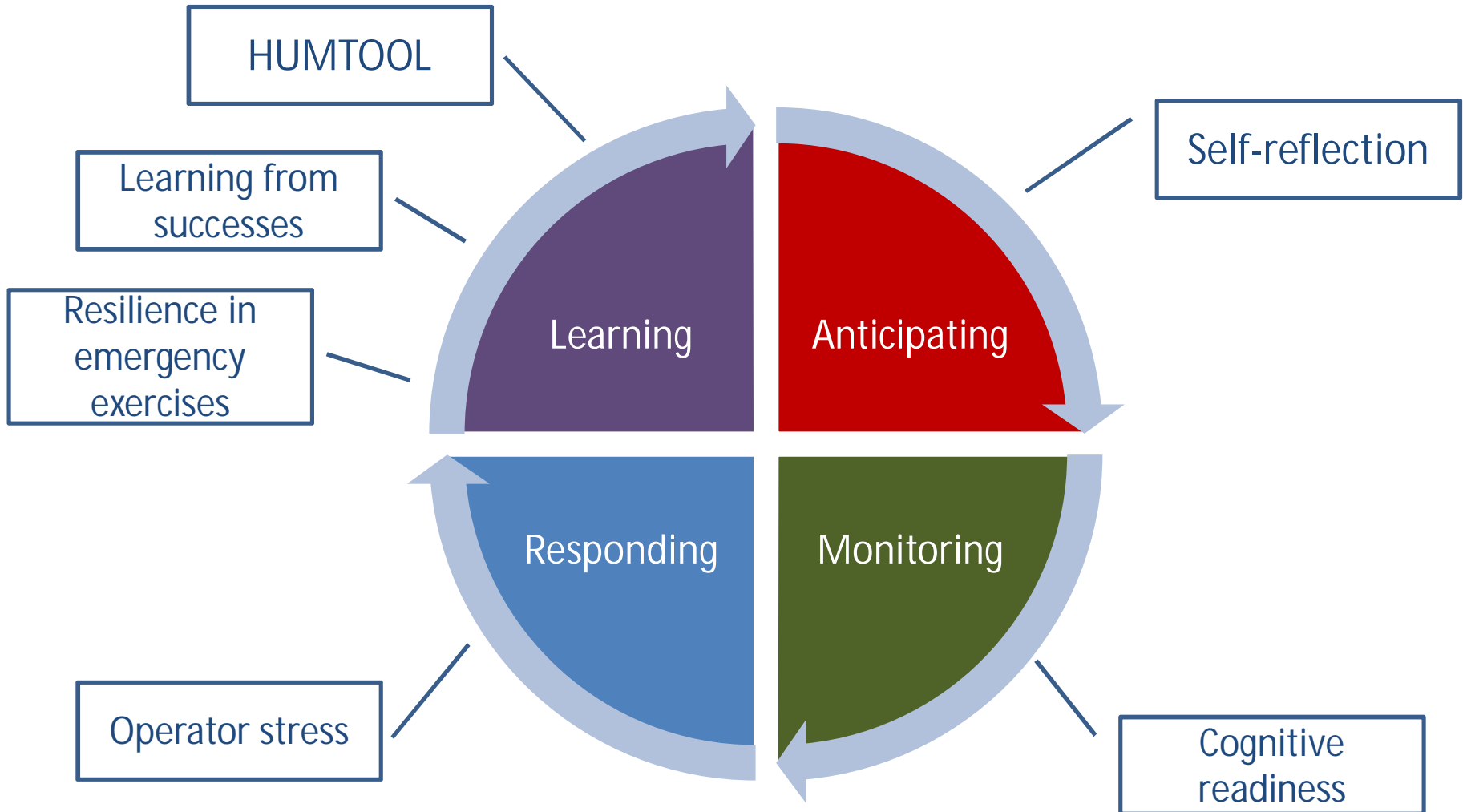


Crafting Operational Resilience in Nuclear Domain (CORE)

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CORE themes in terms of capabilities of operational resilience



Take Home Messages (1)

Learning from successes

- § Promoting learning from successes is important, e.g., to
 - § better understand how normal work maintains nuclear safety
 - § create new opportunities for learning and development of activities
- § Since successes are often less salient and less likely to trigger intentional learning processes than failures, deliberate effort and specific technique are needed to facilitate learning from successes

Work-based learning

- § Operative personnel need resilience skills to master the increasing amount of perturbations and goal conflicts in their daily work
- § In order to facilitate the development and exchange of good practices between operator crews, new methods are needed, based on guided dialogue among operators
- § The self-evaluation method, comprising 1) personal evaluation, 2) group evaluation and 3) inter-group learning, is working well and yielding promising results

Take Home Messages (2)

Supporting cognitive readiness

- § Multitasking has shown to be an annoying factor in operator work
- § Negative consequences of perturbations can be mitigated, for example, by
 - § better procedure and user interface design;
 - § alarm management;
 - § team training
- § Decision-making heuristics are often useful, but they should be used carefully
 - § Often it is useful to see decision-making as a continuous process which does not lead to an ultimate, final solution, but only to a satisfactory solution

Stress management

- § Operator performance might be more vulnerable to negative effects of stress in particular phases (e.g., information seeking) of an incident
- § For optimal learning of procedures and work practices, simulator training should be carried out in only mildly stressful or no-stress conditions
 - § However, for maintaining high level of performance in highly stressful conditions simulator training in very stressful conditions would be useful

Take Home Messages (3)

Resilience in emergency exercises

- § Emergency exercise practices need more rigor and structure:
 - § overall objectives should be better defined;
 - § feedback to exercise players should be deepened;
 - § lessons learned should be gathered and utilized in a more systematic way

HUMTOOL

- § There is a need for greater awareness and better understanding of Human Factors in the analysis of operational events
 - > Human Factors competence of safety experts has to be strengthened
- § Future implementation of HF thinking in nuclear power industry requires higher HF competence and awareness not only from safety experts in NPPs, but also from
 - § authority;
 - § top and middle management, supervisors and operative personnel in NPPs

CORE summary report in Finnish

