

Resilience Enhancement Applications in Operational Planning and Control for the TSO of Serbia

Power System Operation and Control

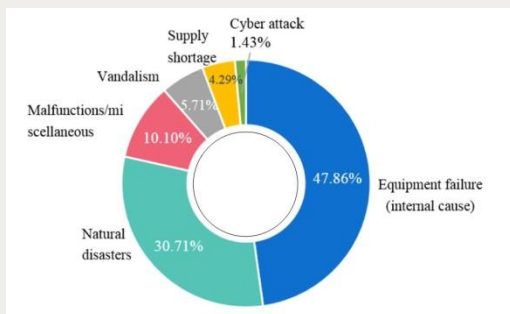
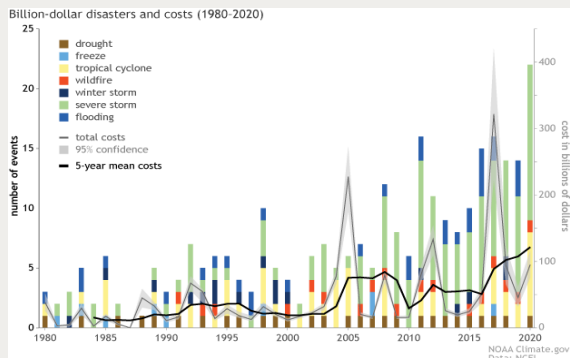
PS1 + Q 1.1:... Is there a limit of tools per control room
operator and how is it measured?

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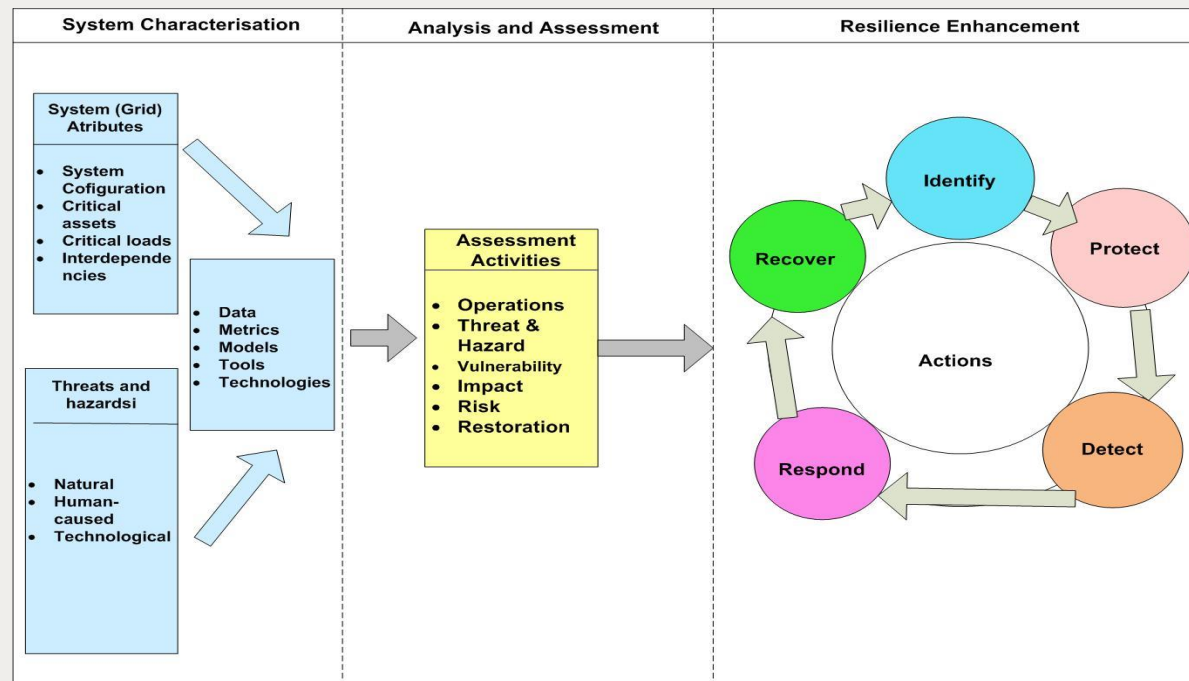


POWER SYSTEM RESILIENCE CONCEPTS and SOLUTIONS

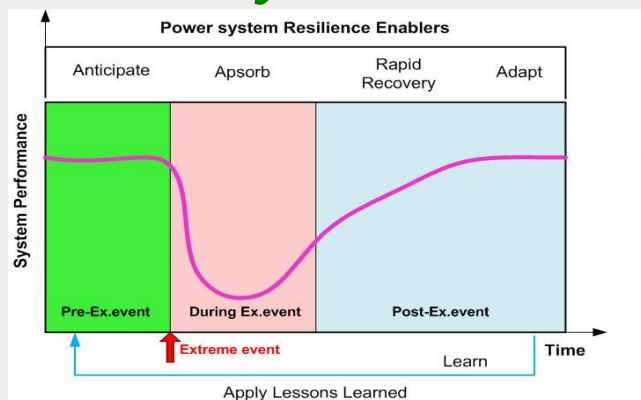
Power System Threats and Hazards



The Resilience Framework for TSO of SERBIA



Power system resilience concepts



Mapping of resilience attributes to extr. event related periods

- Structural resilience enhancement:
- Operational resilience enhancement apps: DLR, PMU/WAMS, LDaLS, BUNCC, HPP black-start cap

Group Discussion Meeting

Q1.1-A limit on tools per control room operator? Answer:

- **There is a limit on the number of tools, always in any practical situation, known or not, due to the constrained info. processing capabilities of human operators (sensor limits, cognitive limits)**
- **But those limits are flexible (to the point) and can be relaxed, through:**
 - **Continuous education and training of operators (New OTS needed),**
 - **Information integration with the "main" control system (SCADA/EMS)**
 - **Automatizing some of the functions**
 - **Increased level of decentralized-coordinated control (smart field)**
 - **Current ICT developments can support these solution paths**