

Paris Session 2022



Simulator-based operator training on power system operating procedures

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Summary

1. Introduction
2. Methodology
3. Developing Expertise
4. Results
5. Current State and the Road Ahead

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Teamwork



Introduction

- Why should we implement simulator-based operator training on power system operating procedures?



More than 172 GW

More than 145,600 km

More than 1,400 documents

(N)EVER(S)TOP LEARNING

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Introduction

- Why should we implement simulator-based operator training on power system operating procedures?

Conventional training



Reunions

Documents

Videos

✓ Presentation of the procedure

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Simulator-based operator training



Reunions

Documents

Videos

Simulation!

✓ Presentation of the procedure

✓ Situational awareness

- How can we prepare?



- How can we prepare?

Approach

- Expositive

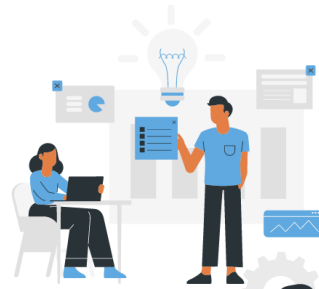


- Participative



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Define scenario

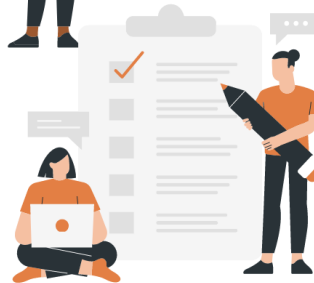


- Simulation plan
- Obtain case

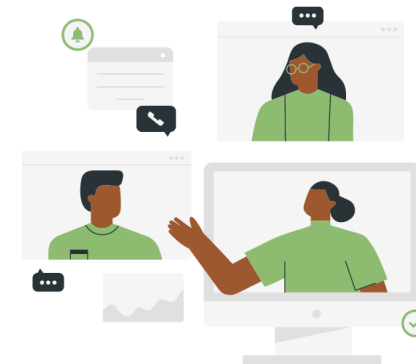


- Adjust case

- Evaluate simulation



Plan the session



- Estimate class size

- Propose schedule



Developing Expertise

- Simulator-based trainings

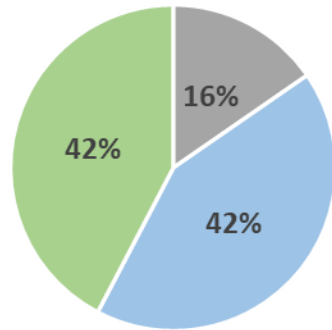


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- Expositive
- Participative
- Mixture from both approaches

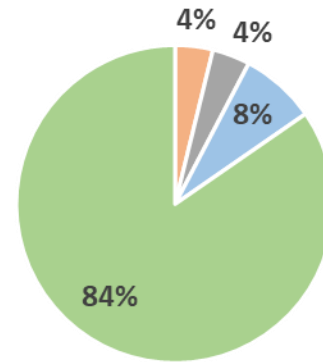


Comparing with previous trainings, the new method is:



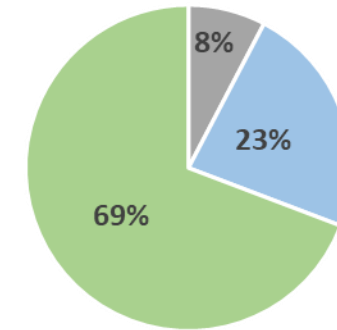
Very Bad Bad Neutral Great Excellent

Relevance of the obtained knowledge



None Low Neutral Moderate High

Motivation for new simulation-based trainings



None Low Neutral Moderate High

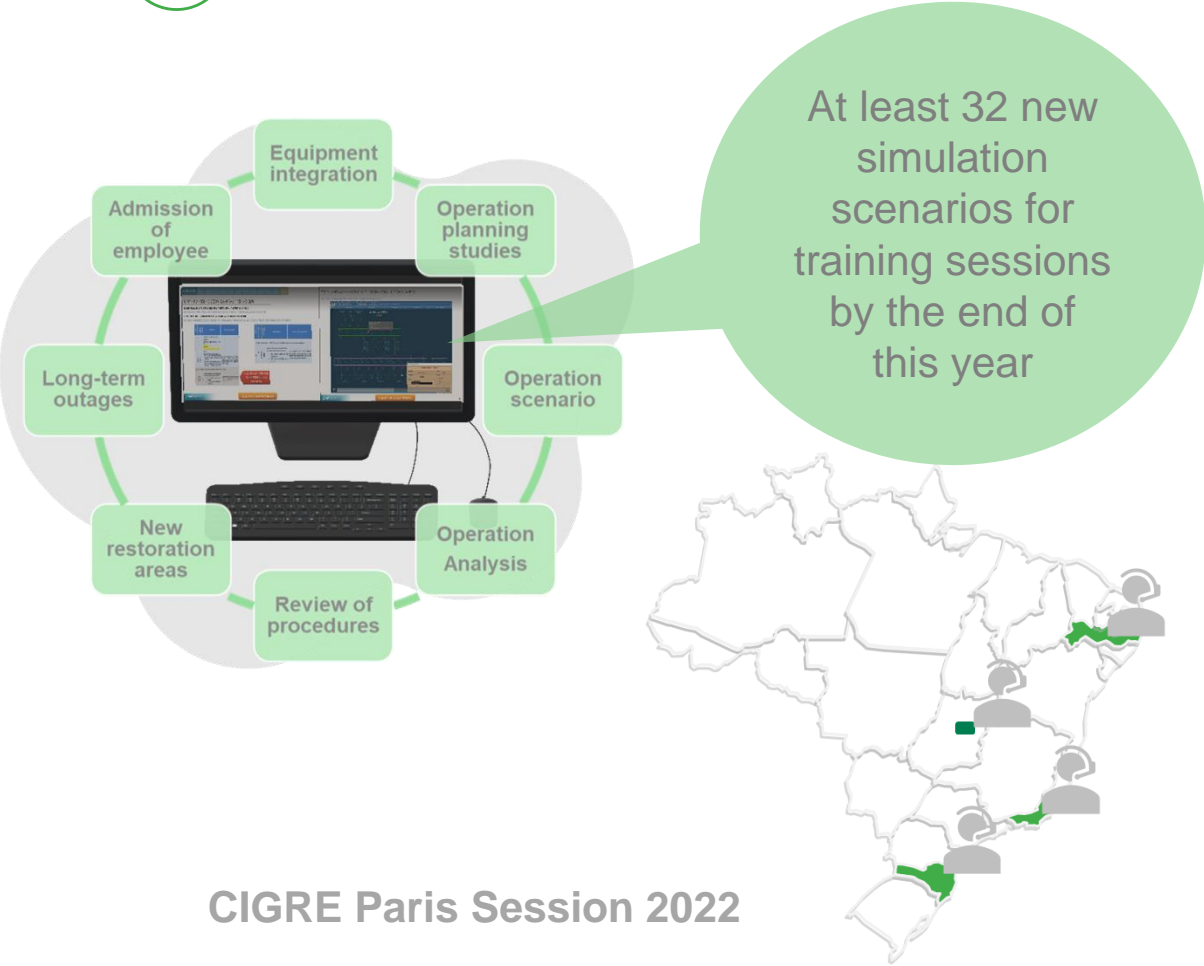




- Operators acknowledged that it **captivated their interest** on the content;
- **Situational awareness** of the actions that were taken during the training;
- Enabled **visualization** of scenarios that may be faced in the Real Time Operation;
- Identification of **improvements** at both the content and the presentation structure from the Operating Procedures;
- Enhanced **teamwork** from both teams.

Current State and the Road Ahead

Operating Procedures Team Goal



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- Enable driven perspective for training sessions;
- Improve learning experience;
- Better prepare for unexpected situations;
- Operating Procedures better suited for Real-time usage.



If we follow the path...

- Time spent vs. Expected Gain;
- Simulator usage can be a challenge;
- Real-time Operators shift scales vs. available time to prepare.

Thank you

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