

Decision Making for System Reliability with Simulation

LEARNING OBJECTIVES

- Given a scenario, discuss the difference between novice and expert decision making characteristics applicable to the scenario with 100% of criteria identified.
- Given the Naturalistic Decision Making model, explain the components involved with 100% accuracy.
- Using examples from the job, relate the process of Naturalistic Decision Making back to System Operators reliability-related job responsibilities 100% correctly.
- Given a decision making scenario, assess the advantages and disadvantages of the common decision models for making decisions correctly with 100% accuracy.
- Given a decision making scenario, describe impediments to successful decision making that prevent the best decisions from being made in the scenario with 100% accuracy.
- Given a decision making scenario with lessons learned, discuss the process of how experts utilize lessons learned to make better decisions in the scenario using 100% of the criteria.
- Given a decision making scenario, identify characteristics that distinguish how the expert made a quality decision correctly.

Segment 1 - Factors Impacting Decisions:

Through classroom discussion, students will explore components that novices use to increase competence, including knowledge attainment, thinking skills and learning styles. Participants will be shown an example of a decision, then divided into teams. Each team will be asked to analyze the details of the situation and report back to the group the elements that are indicative of expert decision making.

Segment 1 - Simulation:

Students will use the PowerSimulator to analyze novice and expert approaches to critical decision making scenarios in the simulated environment.

Segment 2- Naturalistic Decision Making (NDM):

Students will discuss how people determine the best choice during demanding situations. Participants will review the Naturalistic Decision Making model, which describes how most experts process information. Discussion will revolve around the components inherent in the Naturalistic Decision Making Model, Mental Models, Situational Awareness and Sense Making. A standard System Operator decision will be utilized as a scenario so that students can relate it back to their job function.

Segment 2 Simulation:

Students will use PowerSimulator to identify the components of Naturalistic Decision Making in simulated scenarios.

Segment 3 - Other Decision Models:

Using classroom discussion, participants will examine other decision making models, and evaluate their qualities and potential limitations within System Operations. (Palco simulation exercise will be conducted to determine which decision models facilitate best decisions [1 hour simulation]).

Segment 3- Simulation:

Students will use PowerSimulator to discuss the strengths and weaknesses of the decision making models for use in system operations using simulated scenarios as examples.

Segment 4 - How the Brain Works:

As a group, participants will be given the Stroop test that demonstrates how the mind is preconditioned to act in set ways and how difficult it is to go against those presets. Through general discussion and scenarios, students will examine other cognitive functions that can prevent quality decision making.

Segment 5 - Expert Decision Making:

Through group discussion, participants will first focus on methods used to develop expert decision makers. Then students will examine techniques that experts utilize to make quality decisions.

Segment 5 – Simulation:

Students will use PowerSimulator to demonstrate expert decision making techniques in simulated scenario.

AVAILABLE CREDITS

32 : Total CEH

16 : SIM

PRICE

4-Day Classroom = \$ 1,360

2-Day Classroom Option:

Call your sales representative for information about our 2-day class.

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