Simulated Tabletop Exercise for Electric Power Saving Management in a Small Organization

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ABSTRACT

After the Great East Japan Earthquake in 2011, almost all of nuclear power plants have been stopped running and problems of electric power shortages have been occurred in Japan. In order to overcome electric power shortage problems, the movement of saving electric power widely spread in Japan. But, from views of consumers of electric power, it was hard for them to understand what kinds of actions were mostly effective for saving electric power in their organizations such as their home, companies and so on. This is because the only way of checking whether we succeeded to save electric power of not is to see the total usage of the electric power on the power meter.

In our research, to analyze the usage of electric power in our laboratory, we constructed the agent based simulation model. In this model, all electronic devices in our laboratory are represented and people in our laboratory uses these devices according to their activities. Activities of people in our laboratory are also represented as activities of agents in this model, and activities of people are based on questionnaires we did in our laboratory. From simulation results of this model, it becomes possible to know what electronic devices use electric power most. And it also becomes possible to test some policies of saving electric power and know the effectiveness of each policy from this model.

Our game, "SIMULATED TABLETOP EXERCISE FOR ELECTRIC POWER SAVING MANAGEMENT IN A SMALL ORGANIZATION", is based on our simulation model. In this game, each player becomes the manager of saving electric power in a small organization and has to decide which policies to use for saving electric power.

After deciding policies, player's policies are represented in the simulation model and player will get simulation results, and player's will know the effect of player's policies in a small organization.

The concept of saving electric power in a small organization is very famous in Japan but may be not outside Japan. From playing our game, we hope that our game will become a chance to review player's daily activities of using electric power in the real life.

What lessons are to be learned by the participants when playing the game?

- Main lesson of this game is the notification of saving electric power action in the daily life.

How can the administrator determine if the lessons of the game have been learned by the participants?

- Debriefing, like discussions, with showing all other possible simulation results of this game.

If the game is played in rounds, what is the minimum and maximum number of rounds that need to be played?

- This game needs exactly four rounds by five people/groups.

If played in rounds how much time should be allocated for the decision process for each round?

- There are about 60-120sec. between decision processes.

What devices are needed by the players to play the game?

- Nothing.

What decisions need to be made by the players?

- Players choose one policy card from each category. There are four categories. So players have four chances to choose a card. Five people/groups compete for cards.

What information is provided to the players after each round.

- Nothing. But players can see what kinds of cards are still remained.