

“ALARA Studies for EDF Nuclear Power Plants”

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The ALARA studies so far made in the plant of the EDF have been simple, depending on past experiences and common sense. However, under the complicated conditions where a number of radiation sources contribute to the dose rate of operation areas, it cannot be said that human experience and common sense alone are sufficient to apply the results of these studies and judge whether they are appropriate or not. Therefore, complicated analyses utilizing radiation protection-related software are needed.

The EDF/UTO is developing a method which would aim at reducing the collective dose in maintenance operations and its prototype. It is a scenario optimization prototype tool with its calculation code being PANTHER-RP and is based on EXCEL. The prototype serves as an engineering tool, and it is scheduled to be introduced to the sites after it is further improved hereafter.

This tool calculates the collective dose and the amount of exposure reduction of maintenance work corresponding to various scenarios which respond to the implementation or non-implementation of the protection measure option of each operation area. In addition, the tool calculates and displays the dose rate contribution of each radiation source to each operation area. The final objective of this tool is to calculate not only dose rate but also collective dose, and thereby to help stakeholders select and decide the ALARA option scenarios.

Moreover, after introducing the tool to TRICASTAN, it has become clear that it is quite important to bring in site engineers from the following viewpoints:

- Collecting input data
- Optimizing the ALARA scenarios
- Connecting with shielding contract companies

