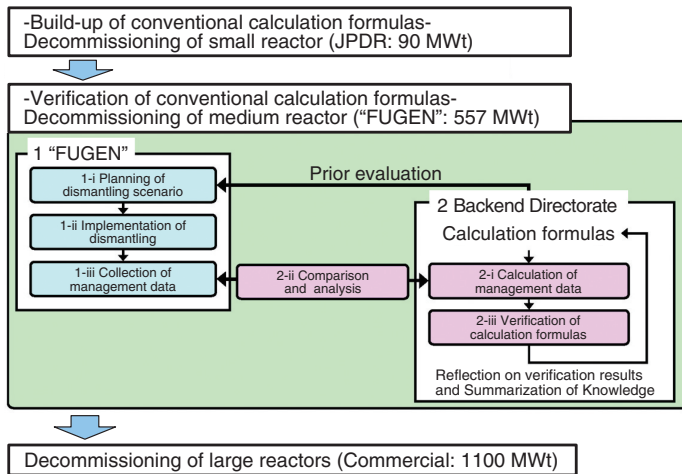


# 9-1 Rational Decommissioning Planning

## — Development of Project Management Data Evaluation System —



**Fig.9-2 Scheme for verification of calculation formulas**

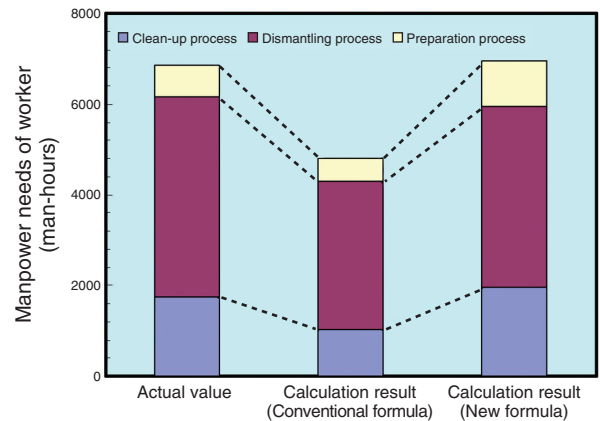
The knowledge obtained in this study will be used in the decommissioning of commercial reactors.

We have many nuclear facilities. When these facilities have completed their mission, they will be in the decommissioning stage. For the rational planning of the decommissioning, we are developing a project management data evaluation system (PRODIA).

PRODIA is used to obtain project management data such as manpower needs on the basis of the dismantling scenario and physical data.

The conventional calculation formulas of PRODIA were derived with actual values related to the decommissioning of the JPDR, and therefore, the applicability of the conventional calculation formulas must be verified for decommissioning nuclear facilities of other types and/or with a different scale.

Toward this end, we are studying the applicability of the calculation formulas to the decommissioning of "FUGEN". The plant scale of "FUGEN" is larger than that of the JPDR (as inferred from the thermal outputs of the reactors), as shown in Fig.9-2, whereas the basic structure of the turbine system is almost the same for both plants. Thus, we can study



**Fig.9-3 Comparison of actual value and calculation results**

The conventional formula (preparation/clean-up process: constant expression involving 3 levels of working area; dismantling process: linear expression involving the weight of equipment) gave values smaller than the actual value. The values obtained with the new formula (preparation/clean-up process: linear expression involving the working area; dismantling process: linear expression that includes several work items) showed good agreement with the actual value.

the effect of the plant scale on the project management data.

As the first step in this study, the manpower needs for the dismantling work in 2008 were calculated using the conventional calculation formulas. As shown in Fig.9-3, we found that the value was 73% of the actual value, implying that it will be improper to use the conventional calculation formulas for "FUGEN".

To use PRODIA for further decommissioning planning, we studied the difference between the dismantling of the JPDR and that of "FUGEN" and found that differences in the scale of dismantling operation and the description of work items caused the mismatch between the actual and the calculated values. By reviewing the calculation formulas, as shown in Fig.9-3, we obtained new calculation formulas. The value obtained with the new calculation formulas showed good agreement with the actual value.

For the wide applicability of PRODIA, we will organize the knowledge obtained from the verification of the calculation formulas for the decommissioning of other facilities.

### Reference

Shibahara, Y. et al., Study on Evaluation Models of Management Data for Decommissioning of FUGEN, Proceedings of the ASME 13th International Conference on Environmental Remediation and Radioactive Waste Management (ICEM2010), Tsukuba, Japan, 2010, ICEM2010-40102, 7p., in CD-ROM.