Evaluation of Project Management Parameters for Decommissioning of KARTINI Reactor *Anggoro Septilarso¹, Daisuke Kawasaki¹ and Satoshi Yanagihara¹ ¹University of Fukui.

A decommissioning activity of a KARTINI TRIGA Reactor was planned using systematic methodology tool, COSMARD. The advantages/disadvantages of multiple decommissioning scenarios were compared based on calculation of man-power needed and waste amount.

Keywords: TRIGA Reactor, COSMARD, Man-Power, Waste Amount, Decommissioning

1. Introduction

A study of scenarios for decommissioning are important to be done by considering project management parameters. In addition, a reliable estimation on project management parameters, such as waste amount generated, the required man-power, and radiation exposure of the decommissioning activities for each scenario will plays an important role in the decision making of selecting suitable scenario. These parameters are naturally site-specific based on facility type and involving numerous tasks and items, therefore should be estimated by using systematic methodology tool. The objective of the present study is to develop scenarios and select optimum one based on the calculation of project management parameters.

2. Methodology

First, we needed to develop scenarios considering such attributes, as the time frame, economy, procedure, and future use. Then we established the Work Breakdown Structure (WBS) for each possible scenarios. Next, we calculated the project management parameters for each scenario using COSMARD. Last, based on those parameters we compare the advantages/disadvantages of each scenarios. By applying this methodology, all parameters can be quantified and make it easier to be directly used in the decision making process.

3. Result and Discussion

By considering the site specific of the KARTINI TRIGA Reactor, we put the future use of the site as the top priority in the developing the scenario. Therefore, first we consider two fundamental scenarios; the overall dismantling (in which all reactor structures except the building are dismantled) to use the building for other nuclear purposes, and the partial dismantling (in which only the highly radioactive components are dismantled) to transform the remaining components and the building into a museum. We also consider other attributes, such as the time frame, economy, and procedure of the dismantling activities, in the scenario development. For the example of estimation of project management parameters, the calculation result shows that for the overall dismantling it will need 930.3 man-days with arising 707.4 tons of wastes. On the other side, the partial dismantling will need 423.6 man-days with arising 43.7 tons of wastes. This result shows that the overall dismantling can dismantle about 16 times larger amount of wastes with around twice as large manpower as the partial dismantling.

4. Conclusion

Two main scenarios considered in the study are overall dismantling and partial dismantling by considering some attributes. The project management parameters for each scenario are evaluated using systematic methodology tool, COSMARD, and the advantages/disadvantages of the scenario are compared each other.

References

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