

Status of the Decommissioning Project Management Information System Development of KAERI in 2017

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1. Introduction

Various information systems have been developed and used at decommissioning sites for planning a project, record keeping for a post management and cost estimation[1]. KAERI is the only one expert group which has decommissioning experiences and KAERI is trying to develop computer code to converge all the data which has been accumulated during KRR-1 & 2 and UCP (Uranium Conversion Plant) decommission. KRR-1 and KRR-2 are TRIGA MARK type of research reactor which was constructed worldwide. Hence, there are many chances to use decommissioning experiences and data when other TRIGA MARK type of research reactor starts to decommission. KAERI DPMIS stands for Decommissioning Project Management Information System, which is aiming to re-use of data effectively.

2. DPMIS development scheme and status

Goal of DPMIS is build customized documentation with respect to user specific requirement and conditions. For example, research reactors in Thailand and Indonesia are TRIGA MARK type, hence, it is expected that many common items exist. In terms of decommissioning technique and procedure, there are many things that can be re-used, however, regulations are various, which depend on nation's decommissioning policy. In this regard, start-up decommissioning project should be modified based on accomplished project management information. At the moment, building a customized decommission planning documentation is near term objective.

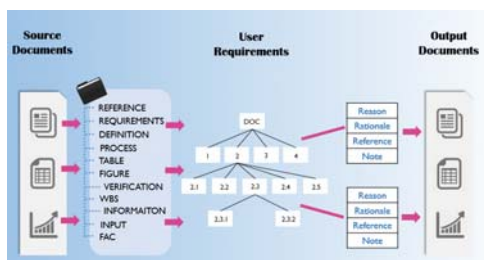


Fig. 1 KAERI DPMIS schematic diagram

Fig.1 is conceptual diagram which shows how DPMIS works with user requirements. For better quality of the end product and re-use of decommissioning information, it should be broken down and re-organized with DPMIS. Recently experienced data about KRR1 and 2 were successfully

converted by using DPMIS and it is ready for another case of research reactor decommissioning.

3. Key Features of DPMIS

DPMIS is going to have following features. In near term, data re-organizing and re-use feature are primary objective, however, DPMIS should accommodate server-client based multi-user SE (system engineering) features in the long run.

1. Template function
2. Building User Requirements
3. Requirement Management
3. Network independent DBMS
4. User friendly graphical interface
5. Report and print

Details of the key features will be discussed latter part of this paper.

3.1 DPMIS template

One of the most prominent features in DPMIS is template function, which is pre-defined decommission scenario for given system by expert. Users can start their scenario with that and modify it based on user specific requirements. Fig 2 shows screen shot of DPMIS at the first run. It starts with general template for research reactor decommissioning. Fig 3 presents 2 parts of the template. For example, in the dark blue boxes there are 'design and planning' and 'activity' sections and their sub-items.



Fig. 2 Template Screen (1)

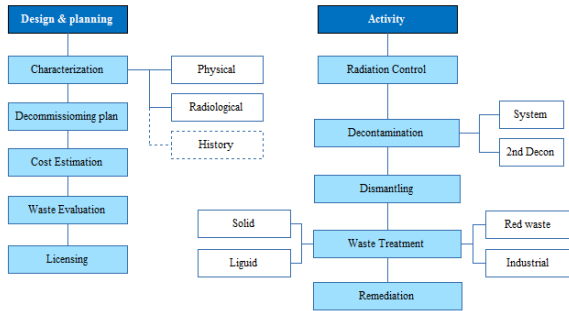


Fig. 3 Template Screen (2)

3.2 Data View Tree Structure

DPMIS consists of three major views: project view, data tree view and data management view. Project view is a list of project names, which are user created project based on the DPMIS template. DPMIS data view consists with 12 kinds of data types (reference, requirement, definition, process, table, figure, verification, WBS, documentation, information, input and FAC). And each item has its own data management view, which will be presented latter.

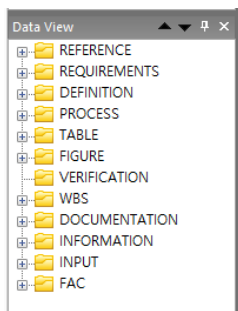


Fig. 4 DPMIS Data view Structure

3.2 Decommission Planning View

Decommissioning plan is a fundamental document which is end product of DPMIS. Each chapter and combined references, tables, figures and requirements can be managed in this view. User can find other resources such as WBS (work break-down structure), reference and documents by using search function and it can be linked. In DPMIS item combining tools help to link both two items with 'drag & drop'.

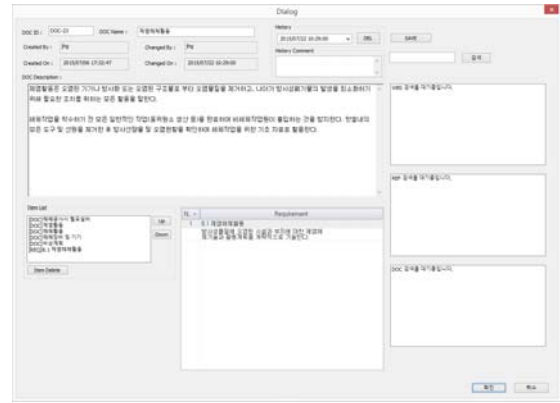


Fig. 5 DPMIS Planning view

3.3 Reference, table and figure management

Reference, table and figure are representative items which can be re-used in any decommissioning project. Each item has unique ID and it can be referenced in any documents. DPMIS takes care its numbering according to its location in document. If modification takes place, through history control function user can navigate to previous versions and modified items are highlighted automatically.

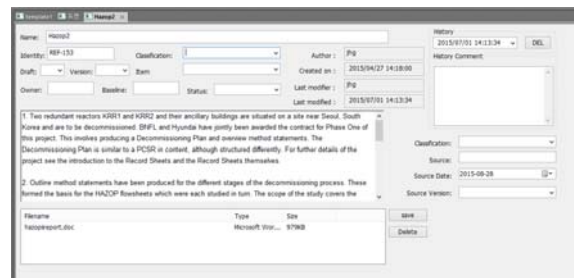


Fig. 6 Example of management view

3.4 Process management view

DPMIS offers 2D graphical process editing feature. User can build a procedure and if it is typical one, user can search through the DPMIS. Specification of procedure can be edited by double click each step.

3.5 Radioactive Waste Classification Update

Classification of radioactive waste has been revised since 2012, which means disposal cost should be changed for the future applications. KAERI DPMIS has been updated according to regulation changes and the impact of decommissioning cost was demonstrated.

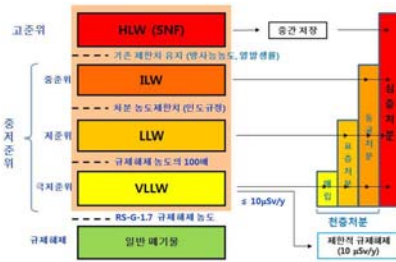


Fig. 7 Updated Classification of radwaste

4. Future plan of DPMIS development

KAERI DPMIS development project has been scheduled to be finalized at the end of 2017. 1st stage of development has been accomplished and field test in on going. At the next stage, server-client based multi-user SE (system engineering) feature will be updated in coming years. It can let DPMIS much more practical in upcoming decommission planning.

5. Conclusion

As a responsible leading group of Korean decommissioning research field, KAERI has been developing DPMIS application program, which is going to be an important mile stone of decommission industry in Korea. User friendly graphical interface and lots of actual data let people well understood on decommission planning. It is expected that continuous effort and funds will be delivered to this research.

References

- [1] S. K. Park, S. B. Hong, et. al., "A Decommissioning Information Management System," the Korean Nuclear Society Spring Meeting Vol.1 (2007).