

eOMEGA – DEVELOPMENT OF ISDC BASED DECOMMISSIONING COSTING PLATFORM

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Abstract:

The main purpose of the paper is to present the development procedure of the eOMEGA as a platform for decommissioning costing of nuclear facilities. The eOMEGA costing platform, intended to be a part of the universal eOMEGA platform covering also the other activities within the back-end of nuclear power engineering, is considered to be a tool for assessment and transparent presentation of decommissioning costing data in the harmonised structure. The methodology for cost calculation in the eOMEGA is in line with the international recommendations and best practices [1] and is based on the methodology defined in the International Structure for Decommissioning Costing (ISDC) of Nuclear Installations [2].

1. INTRODUCTION

The eOMEGA platform is a logical follow-up of the DECOM long term involvement (more than two decades) in the field of decommissioning planning and costing including the development of unique decommissioning costing codes. The motivation for eOMEGA platform development is to create the decommissioning costing tool taking into account following assumptions:

- fully implemented ISDC structure and methodology to facilitate the harmonisation, transparency and benchmarking in the decommissioning costing;
- contribution to promoting, extending or future upgrading of the ISDC;
- meet the actual international requirements and trends in costing;
- applicable for any type of nuclear facility (power plant, research reactor, waste management facilities, etc.) with any systems, structures and radiological situation;
- applicable in any phase of the decommissioning planning process starting from very preliminary phase during construction of the facility up to final planning just before the start of decommissioning;
- user should have the costing case fully in “own hands”;
- available to any stakeholder involved in the decommissioning planning;
- flexible, open, transparent, modern and user-friendly environment;
- accessibility via internet and supported by secure internet technologies.

2. METHODS

The basic idea behind the eOMEGA platform development is the connection of two existing matured solutions:

- Decommissioning costing software OMEGA with fully implemented ISDC structure and methodology;
- Web-based ADIOS platform with tools and processes to implement any web-based software solution with user-friendly interface.

The core of the eOMEGA platform is a decommissioning costing module with ISDC as a basic calculating structure and format for presenting the costing results. The long term experience with the following specific areas of decommissioning costing are applied in the eOMEGA costing module:

- development and implementation of inventory data (physical and radiological) for the decommissioning costing purposes;
- determination of input data for decommissioning costing (e.g. unit factors);
- calculation of waste management data using unique system simulating the material and radioactivity flow in the decommissioning process;
- presenting the costing results in the ISDC format.

Except of the decommissioning costing, the following modules are intended to be implemented to the eOMEGA decommissioning costing platform:

- specific ISDC costing module for transition period between shutdown of the facility and decommissioning itself;
- module for transforming the data from the other structures to ISDC including the benchmarking of the calculation results;
- ISDC decommissioning cost risk assessment module.

To the future, there is an effort to create an universal eOMEGA platform covering not only the decommissioning costing process but also contains a costing modules for back-end of nuclear fuel cycle, site remediation

(including relevant ISDC extensions) as well as the module(s) for funding of all of the above mentioned back-end activities.

1. **CONCLUSIONS** The paper presents a long term experience and lessons learnt in the field of decommissioning costing. These experience are applied and transferred to the ISDC decommissioning costing platform eOMEGA, which provides the flexible and graded approach for reliable cost estimation explicitly in the recommended ISDC format. The used costing methodology is applicable for any type of nuclear facility and the ISDC costing platform could contribute to greater transparency of decommissioning process and building authorities/stakeholders confidence in the decommissioning cost estimates.

REFERENCES

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- [2] INTERNATIONAL ATOMIC ENERGY AGENCY, NUCLEAR ENERGY AGENCY OF THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, EUROPEAN COMMISSION, International Structure for Decommissioning Costing (ISDC) of Nuclear Installations, NEA Rep. No. 7088, OECD, Paris (2012)

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