



## **Integrated Nuclear Knowledge Management System - NUTEMA**

**Martin Giersch**

University of Pisa – GRNSPG

Via Provinciale Livornese 1291, 56122 San Piero a Grado (PI), Italy

m.giersch@ing.unipi.it

**Nikolaus Muellner, Claudio Camargo, Francesco D'Auria**

### **ABSTRACT**

Knowledge Management has become one of the most important issues for the nuclear industry. On the one hand, the amount of codifiable knowledge in the nuclear technology area saw a steep increase in the last years; on the other hand, due to the “generation gap” in the nuclear industry it became very challenging to organize the seamless transfer of the noncodifiable knowledge from one generation of engineers to the other. Computer aided systems so far where aiming at to preserve the codifiable knowledge. The present paper introduces a system that should support knowledge management not only dealing with the codifiable part of it, but also address broader aspects (which includes the management of non-codifiable knowledge).- NUTEMA. The integrated nuclear knowledge management system NUTEMA should provide interactive combination of information and methods, but also identifying competences which more adequately fit to a given task, keeping track of keeping skills of the experts within an organization. Application is foreseen in nuclear engineering fields as system design, operation and maintenance plant and process modifications, standardization, certification and even for licensing-related tasks. The system combines an extensively diverse and modular database with computer based simulations including a scientific software platform. NUTEMA is conceived to operate in different modes, for example collecting and retrieving database knowledge, training applications, NPP operations support, computer code applications, and as plant analyzer. This paper will present two examples; one acting as at a supporting tool for typical NPP plant modification: In a second case, application on review and optimization of operational process is described. Despite the provided examples deal with different objectives and methods associated with different stages of an NPP lifetime, (design and operation) both are supported by the integrated nuclear knowledge management system.