
THE NATURE OF EXPERTISE AND HUMAN RESOURCE FUNCTIONS SUPPORTING EXPERTISE IN NUCLEAR INDUSTRY ORGANIZATIONS

^a N. Rintala, ^b K. Pahkin, ^b L. Anneli, ^a S. Katri, ^a J. Eila

^a Helsinki University of Technology, Finland

^b Finnish Institute of Occupational Health, Finland

E-mail address of main author: niina.rintala@tkk.fi

The nuclear industry worldwide faces the challenge of preserving the existing expertise, competence and knowledge despite of the ageing workforce and upcoming retirements. Challenges are also imposed by the reducing amount of new recruits and students entering the nuclear industry, which amounts to fewer young professionals that have the potential to become nuclear experts in the future. Although many other industries share similar challenges, the preservation of expertise in the nuclear industry is even more important due to the safety-critical nature of the nuclear operations and the special characteristics that high-reliability organizations such as nuclear power plants have.

As a response to the risk of knowledge loss, nuclear organizations have engaged in knowledge capturing efforts. New information systems and organizational practices have been implemented to safeguard nuclear expertise. Recently, IAEA has proposed nuclear organizations to design and adopt people-centered programs that encompass themes such as workforce planning, recruitment, training, succession planning, leadership development and knowledge management [1]. Thus, in order to address the current risks to nuclear expertise, attention should be focused on these different areas and corresponding human resources (HR) functions within the nuclear organizations.

Our paper presents results from a project which examines the nature of expert work and human resources (HR) functions that support the development and preservation of expertise. The study adopts a qualitative cross-sectional case study design. Two organizational units from different nuclear industry organizations have been selected as cases. The research data will be gathered in April-May 2007 and preliminary results will be presented in the International Conference of Knowledge Management in Nuclear Facilities, in June 2007.

The main data will comprise of thematic interviews to experts, their managers and HR representatives. Altogether approximately 25 interviews for experts will be conducted. The aim of these interviews is to disclose e.g. how the experts themselves describe their expertise and their expert role, what kind of support they need in maintaining and developing their expertise as well as what skills and skill sets they consider to be critical in the future. Approximately 5 interviews are carried out for managers. These interviews set out to explore the managers' role in allocating and designing human resources and their insights on the current HR practices supporting the development and preservation of expertise. About 3 HR representatives will be interviewed to uncover how HR functions, such as recruiting and training, operate currently. The HR functions that are used in the nuclear power organizations are then compared to HR process models and designs from the human resources management (HRM) literature.

The study contributes to the HRM body of knowledge from a functional, micro level perspective, exploring the impacts of HR practices on individuals rather than on corporations or business units (a strategic, macro level perspective). Furthermore, rather than studying one individual HR practice, we treat multiple HR practices as a system in order to uncover how individual practices complement, substitute for, or even conflict with other practices. [2] As a

result, we expect to produce new understanding about the nature of expertise in the nuclear industry and discover new innovative ways to support the development, preservation and sharing of expertise.

REFERENCES

- [1] IAEA. (2006). Risk Management of Knowledge Loss in Nuclear Industry Organizations. Vienna: IAEA
- [2] WRIGHT, P.M., BOSWELL, W.R. (2002). Desegregating HRM: A Review and Synthesis of Micro and Macro Human Resource Management Research. *Journal of Management* 28 (3), 247-276