



**SOME ASPECTS OF PROCESS COMPUTERS
CONFIGURATION CONTROL IN NUCLEAR POWER PLANT KRŠKO
– Process Computer Signal Configuration Database (PCSCDB) –**

Damir Mandić, Roman Kočnar

Nuclear Power Plant Krško, Vrbina 12, 8270 Krško, Slovenia
damir.mandic@nek.si, roman.kocnar@nek.si

Boris Sučić

Enconet International d.o.o., Unska 3, 10000 Zagreb, Croatia
boris.sucic@enconet.hr

Abstract:

During the operation of NEK and other nuclear power plants it has been recognized that certain issues related to the usage of digital equipment and associated software in NPP technological process protection, control and monitoring, is not adequately addressed in the existing programs and procedures. The term and the process of "Process Computers Configuration Control" joins three 10CFR50 Appendix B quality requirements of Process Computers application in NPP: Design Control, Document Control and Identification and Control of Materials, Parts and Components.

This paper describes Process Computer Signal Configuration Database (PCSCDB), that was developed and implemented in order to resolve some aspects of Process Computer Configuration Control related to the signals or database points that exist in the life cycle of different Process Computer Systems (PCS) in Nuclear Power Plant Krško. PCSCDB is controlled, master database, related to the definition and description of the configurable database points associated with all Process Computer Systems in NEK. PCSCDB holds attributes related to the configuration of addressable and configurable real time database points and attributes related to the signal life cycle references and history data such as:

- Input/Output signals, Manually Input database points, Program constants, Setpoints, Calculated (by application program or SCADA calculation tools) database points,
- Control Flags (example: enable / disable certain program feature)
- Signal acquisition design references to the DCM (Document Control Module – Application software for document control within Management Information System - MIS) and MECL (Master Equipment & Component List – MIS Application software for identification and configuration control of plant equipment and components)
- Usage of particular database point in particular application software packages, and in the man-machine interface features (display mimics, printout reports, ...)
- Signals history (EEAR–Engineering Evaluation Assessment Request as request for signal acquisition; modification implementation, FDCR– Field Design Change Request and TOP– Turn Over Package; corrective WO– Work Order; operability status; usage experience notes e.t.a.)

Key words: Process Computer, Configuration Control, Database, NPP Krško, NEK