



## MODERN RISK ASSESSMENT FOR NUCLEAR POWER PLANTS HIGH-VOLTAGE SUBSTATIONS

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### *Abstract*

The paper describes a first Romanian attempt to set up the methodology for risk assessment and control within high-voltage substations, developed for the Nuclear power plant in Cernavoda (Romania). Considering the present risk assessment methods the MENER Project will develop a new methodology, in line with the European Community legislation and with the specific regional needs.

In order to correctly shape the necessary resources required by a risk analysis a large size enterprise (a nuclear power plant) is selected and the following five indicators will be estimated: the economic profit, environmental risk, indirect (future) risk, technology improvement and physic & psychological risk.

The results are expected to considerably facilitate risk assessment, by:

- evaluating project acceptability

- evaluating equipment compliance to regulatory criteria
- estimating excluding clearances
- easing the design of emergency programmes
- identifying the equipment use restrictions
- identifying the risk sources
- selecting the maintenance and risk reduction methods
- testing the procedures leading to future regulatory norms
- suitability of the risk management system modification.

The immediate result of employing modern risk assessment methods could be the decrease by one third of the expenses required by environment protection, staff health and labor safety and quality management.

***Key words***

risk, risk assessment, nuclear power plants, high-voltage, substations