

ESTIMATION OF RADIOLOGICAL CONSEQUENCES FOR A HYPOTHETICAL RADIOACTIVE RELEASE AT CERNAVODA NPP

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Abstract. *An analysis regarding the release and atmospheric transport of radionuclides in case of a hypothetical nuclear incident at Cernavoda Nuclear Power Plant was performed in the present paper. For that purpose, the computer code JRodos (Real-Time Online Decision Support System for Offsite Emergency Management in Europe) was implied.*

Keywords: Radioactive effluents; NPP atmospheric release; Numerical weather data predictions Radionuclide modelling

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1. Introduction

The full implications of a serious radiation accident became apparent for the first time with the Chernobyl Accident in May 1986. As response, many ‘Post Chernobyl’ actions were initiated within the European Union’s research and development programmes and related activities in regulation and monitoring, inducing much research to ensure that emergency management processes become better designed to meet future challenges. Decision support systems (DSS) for emergency management after nuclear or radiological accidents or incidents are used in the specific case of a release of radioactive material. Their main task is to provide all the information required to decide on measures to protect the population quickly, continuously, consistently, and comprehensively. Users of decision-making systems are the regional, national and international institutions and organizations responsible for emergency management.

The European Realtime Online Decision Support System for nuclear emergency management (RODOS) [1] is a synthesis of many innovative methods and techniques. Forecasting modules predict how contamination would spread following atmospheric and aquatic releases of radiation. A set of models calculate the best estimate of the current and evolving radiological situation in contaminated inhabited and agricultural areas. Dose models predict the dose to

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