



# LE NHU SIEU: Vietnam

## Improving the Capability for Site Characterization and Evaluation of New Nuclear Installations.



Mr. Le Nhu Sieu works at the Center of Environment Research and Monitoring, Nuclear Research Institute, Vietnam Atomic Energy Institute in Dalat, Vietnam. His responsibilities in the institute include: data collection on the radioactive background in environmental objects and foodstuff as the basis for environmental impact assessment and evaluation to public radiation dose, participation in observation and monitoring of the status changes of environmental radioactivity in selected areas, research on analytical methods and techniques for low-level radioactivity, the evaluation of the transfer of radioactive elements in the environment, and the study and application of dispersion models for atmospheric, terrestrial and surface water dispersion of radionuclides for the first nuclear power plant in his country. This involves the use of specialized computer codes for dispersion considering meteorological data, preparation of input data and interpretation of results, estimation of environmental concentration and evaluation of radiation doses, applications for considering continuous and intermittent release sources during normal operation conditions in both the design and routine objectives, and the evaluation for implicit basis accident releases in design objectives.

Mr. Le Nhu Sieu was awarded an IAEA fellowship in the EVS Division of Argonne National Laboratory in Argonne, IL, USA. During the fellowship, he participated in a training course on RESRAD computer codes for the evaluation of radiological contaminants, human and ecological receptors, and on-site and off-site receptor locations. The training included RESRAD (onsite) for soil contaminated with radionuclides, RESRAD-BUILD for buildings contaminated with radionuclides, RESRAD-OFFSITE for off-site receptor dose/risk assessment, RESRAD-BIOTA for evaluating radiation doses to aquatic and terrestrial biota, RESRAD-Probabilistic for uncertainty analysis capabilities that allow the user to input distributions of parameters, and dose assessment methods & methodologies. Related to the dispersion models & estimation of public dose from nuclear facilities, he also practiced in a case study based on the following computer codes: CAP88 - a modified Gaussian plume equation to estimate the average dispersion of radionuclides released from up to six emitting sources to provide the methodology for assessments of both collective populations and maximally-exposed individuals; GENII - a calculation of potential radiation doses to individuals or populations from both routine and accidental releases of radionuclides to air (ground level or elevated sources) or water and residual contamination from spills or decontamination operations or biological activity; NRCDose - an evaluating routine radioactive effluents from nuclear power plants to perform calculations with up to 169 radionuclides, seven organs (bone, liver, total body, thyroid, kidney, lung, and GI-LLI) and four age ranges (infant, child, teenager, and adult). The experience and technical information systematically obtained during the training helped strengthen his background of dispersion models & estimation of public dose from nuclear facilities. It has also contributed to the environmental impact assessment of his institute and the upcoming construction of a nuclear power plant in Vietnam.