

### Short description

VISIPLAN 3D ALARA planning tool is a PC-based program, developed for the ALARA analyst or the person responsible for the assessment of the dose uptake of the workers.

It allows assessing the doses in a 3D environment and the comparison of different work scenarios.

The VISIPLAN approach involves four steps in the analysis

- Model building
- General dose assessment
- Detailed dose assessment
- Dose follow up

The *model building* is achieved with a set of primitive volumes with associated materials.

A list of nine standard materials is available.

Sources can be selected from an isotope list or defined by an energy spectrum.

Tools for the *general dose assessment* available are isodose plots and the determination of the dose at the pointer position on the screen. These tools allow evaluating shielding solution before going to the detailed dose assessment.

The *detailed dose assessment* tools allow the definition, calculation and evaluation of dose results on specific trajectories and in complete work scenarios.

The program allows output to printer, file and VRML format of the calculated results for future reference and the preparation of the dose assessment information in an ALARA pre-job study.

### Visiplan 4.0 package contains

- Visiplan 4.0 ALARA planning software
- MatISO 1.1 : material and isotopes database interface
- VRML – Convertor 1.1
- WebGenerator ARGUS 1.1

The dose analysis on trajectories and scenarios calculated based on the 3D models in VISIPLAN 4.0 can be reported using the VRML convertor and the ARGUS webgenerator.

The VRML convertor produces a standalone interactive 3D VRML model containing information on the model and the calculated trajectories.

The ARGUS webgenerator produces a standalone web-site with detailed information about the project under consideration with 3D models, scenario-comparison, extra documents, ...

This tool enables the ALARA analyst to report his dose analysis in a comprehensive way to the customer.

### For further information

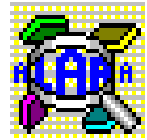
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## VISIPLAN 4.0 3D ALARA planning tool



Dose assessment in a  
3D environment

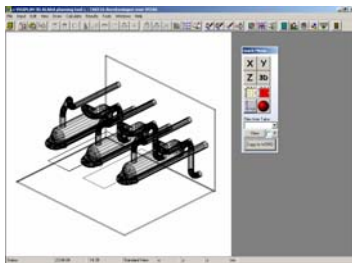
## Why VISIPLAN

The application of ALARA and the dose assessment for work in complex environments is a difficult task. Dose values are influenced by the geometry of the installation, the source distribution, the shielding configuration and the work organisation. VISIPLAN provides an environment capable of tackling these problems easily.

### Basic features

#### Geometry and source definition

- Geometries defined in 3D wireframe
- Geometries and trajectories can be viewed with a VRML browser.
- Database for standard materials
- Isotope database
- Geometry check capabilities
- Source strength determination from measured dose rate sets



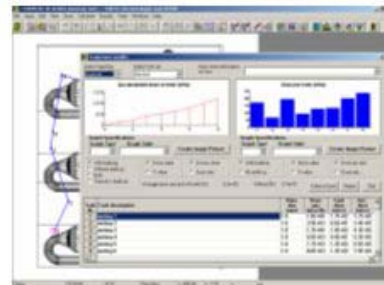
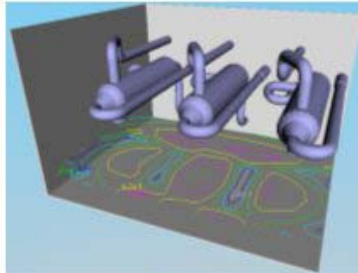
#### Dose calculation

- Point-kernel with build-up correction
- Random sampling of volume sources with statistical error estimate on dose rate
- Error estimate for accumulated dose based on work duration uncertainties

#### Planning capabilities

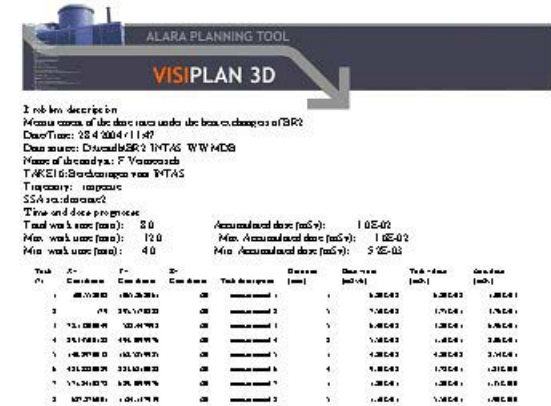
- Isodose calculation
- Trajectory- Dose calculation
- Scenario-Dose calculation

- Individual dose assessment
- Collective dose assessment
- Scenario comparison
- Source Sensitivity Analysis



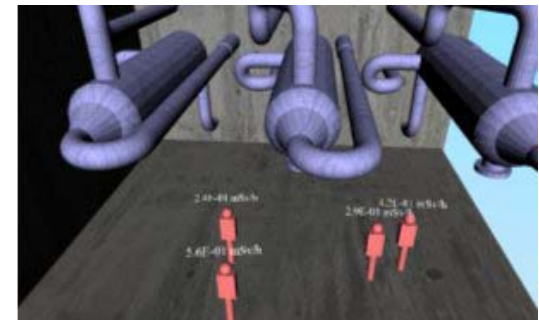
#### Reporting capabilities

- Trajectory, scenario printed reports
- Scenario comparison report
- Isodose plots
- Accumulated dose and dose rate plots
- Output to Word and Excel



#### VRML Interface

- Conversion of the geometry to VRML format
- Conversion of trajectories dose results to VRML format



Real Situation

VISIPLAN 4.0 model

