

and safety lay-out (including equipment present, systems providing for plant safety such as monitoring of chemicals at the site, preparations for large-scale decontamination, and waste and effluent treatment, relationship to other plants if the inspected facility is part of a larger complex, etc.).

#### 4. Assessment of the security regime at the site.

Here is an example for how such assessments may be carried out: In the GDR trial challenge inspection, a computer program for the generation of synthesis paths was used for evaluating the "chemical capability". For illustrative purposes, some general information on the program follows:

The program used is called RDSS (Reaction Design by Synthone Substitution) and has been jointly developed by the Chemiekombinat Bitterfeld, and the Central Institute for Cybernetics and Information, GDR Academy of Sciences, Berlin, with the aim to compute synthesis strategies or break-down paths of chemicals. It may be applied to compute potential synthesis paths from chemicals present at a site into chemicals listed under schedule 1.

The program uses structural features of the parent chemicals in form of synthones and a database compiling chemical reactions published during the past 10 or so years as reported by the Chemical Abstracts Service. Synthones form the "knowledge-basis" of this data-base. Starting from the structural information of a parent chemical, generation of son chemicals is thus possible, and vice versa. It is also possible to combine a parent chemical with a remote son chemical (superposition of son chemical generation with break-down computation) in order to identify possible synthetic paths between the two.

The program uses eight different levels of discrimination for excluding chemically improbable reactions. It is planned to further study the potential application of this program for verification purposes.

In a more general way, approaches and concepts which have been developed for the conduct of risk assessments in other fields may to some extent be applicable here.

#### 5. The overall risk assessment would be the result of all these partial assessments in combination. In case that the inspection team encounters features at the inspected site which, in the judgment of the team and based on best international practice at industrial plants of the type inspected, may point to an immediate and significant risk, the inspection could enter into phase 3. Otherwise, the team could conclude inspection activities.