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**Evaluation of the results of the workshop
"Risk Factors for Adult Leukaemias and Lymphomas",
Heidelberg, 15/16 January 1996**

Recommendation by the German Commission on Radiological Protection

Adopted at the 136th session of the Commission on Radiological Protection on
22/23 February, 1996

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**Bewertung der Ergebnisse des Workshops
"Risk Factors for Adult Leukaemias and Lymphomas",
Heidelberg, 15./16. Januar 1996**

Empfehlung der Strahlenschutzkommission

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In the event of any doubts about the meaning, the German original as published shall prevail.

On 15 and 16 January 1996, the German Cancer Research Centre (DKFZ) in Heidelberg organized an international meeting of experts on the subject "Risk Factors for Adult Leukaemias and Lymphomas".

The German Cancer Research Centre succeeded in attracting some outstanding, internationally acknowledged scientists to this meeting, who addressed such key aspects as the causes, molecular biology, pathogenesis, course and epidemiology of leukaemias and lymphomas in adults.

From the standpoint of the Commission on Radiological Protection, the main results of this meeting are as follows:

- The proper classification of special forms of leukaemias and lymphomas is extremely difficult. There is no international consensus on standard evaluation parameters. This is evident from the fact that there are approximately six different schemata in simultaneous use which match only to a limited degree. In a few years' time, a revised schema adjusted in line with the current state of knowledge is to be presented. The areas of uncertainty which currently obtain with regard to the classification of leukaemias and lymphomas render comparisons between different studies extremely difficult.
- Scientific endeavours towards clarifying the causes of lymphomas are very important since, in contrast to leukaemias, a clear trend towards rising lymphoma rates has been evident for a considerable period of time.
- The following possible causes of leukaemias and lymphomas were discussed:

Viruses:

Studies on various rare viral diseases provide reasons for not disregarding this hypothesis.

Chemicals and drugs:

Medicines for treating cancer, and also some special chemical substance groups, for example, have been established as causes.

Ionizing radiation:

Studies of groups of people subjected to fairly high levels of radiation exposure (e.g. in Hiroshima and Nagasaki) have produced some findings on dose-effect relations. According to these findings, the rare increase in the frequency of leukaemias in the vicinity of nuclear installations cannot have been caused by ionizing radiation, since for this to be the case dose values of several hundred mSv would be necessary. However, the additional radiation exposure which has actually been established in the vicinity of nuclear installations is in the order of around 0.01 mSv/year.

Electromagnetic fields:

Studies have produced no consistent results with regard to a connection between electromagnetic fields and the occurrence of leukaemias and lymphomas. In addition, there are no known plausible action mechanisms.

- Leukaemia clusters in adults are extremely rare. They are usually considered to be aleatory, since only rarely is it possible to identify the cause of the disease. A Cluster

encompasses only a few cases, for which reason it is unsuitable for the purpose of clarifying the spectrum of causes of leukaemias. An epidemiological study cannot be geared towards simultaneously researching the causes of a cluster and the general causes of leukaemias. Studies of clusters of chronic diseases involving different latency periods are rendered difficult by the presence of high false-positive rates and a low degree of statistical relevance.

- The international experts were of the opinion that new epidemiological leukaemia studies would be impractical until such time as more information on the molecular bases of the occurrence of leukaemia are available than is currently the case.
- The draft design for a study of leukaemias and lymphomas in adults presented to the meeting by Professor Greiser was discussed in detail. The international experts came out against the conduct of such a study, since – as the studies which have been conducted in the vicinity of Sellafield have already demonstrated – no new information on the causes of the occurrence of leukaemias and lymphomas in adults can be expected. The experts doubted that the incidence study underlying the design justified more far-reaching studies, such as a case control study. In addition, doubts were expressed as to the scientific character of the study design, since it is intended to link arbitrarily with the Krümmel nuclear power station regions in which it is known that high incidences of leukaemia exist.

Therefore, the Commission on Radiological Protection is opposed to the performance of such a study.