

AN OVERVIEW OF RADIATION EMERGENCIES:
INTERNATIONAL PERSPECTIVE

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The catastrophe at the Chernobyl nuclear power plant at 01.23:47 on April 26, 1986 made it obvious that conventional emergency planning has serious shortcomings. An accident in the USSR caused radioactive contamination over most of Europe, triggering remedial actions for which the responsible authorities were utterly unprepared.

Although I have been asked to give an international perspective to emergency planning, I shall concentrate on the situation in Sweden, which is what I have been asked to do.

HISTORY

Earlier reactor accidents, such as the NRX accident at Chalk River in 1952 and the relatively minor accident at the Idaho Testing Station in 1956, did not cause any widespread environmental threat. Consequently, the early emergency planning was mainly to remedy the on-site plant situation. Therefore, at the first Atoms for Peace conference in Geneva in 1955, H.M. Parker and J.W. Healy received attention for reviewing the possible effects of a major reactor disaster when they mentioned lethal injuries up to distances of several tens of kilometers. Similar estimates were presented in the first major consequence assessment--the Brookhaven report "WASH-740" in 1957--where simple remedial actions, such as staying indoors, were mentioned and the importance of training local emergency teams was stressed.

It was the accident in the British plutonium-producing reactor, Nr. 1, at Windscale in 1957 that demonstrated the need for emergency planning to protect the public. Large areas of land were affected and it was necessary to discard milk contaminated with radioactive iodine for an area of approximately 500 km². Following this accident, the British Medical Research Council recommended action levels for evacuation and for the discarding of milk; these recommendations formed the basis for adoption of similar action levels in other countries.

In Sweden in 1962 a special law was passed requiring emergency plans in counties with nuclear power stations. Because it was considered impossible to base immediate actions on anything but checklists for preplanned actions, the early phase of an accident received the most attention. Most important were to establish a clear line of command for quick decisions, to train local emergency teams, to provide an

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