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Responding after a big nuclear accident

ABSTRACT. Managing the aftermath of a major nuclear reactor accident will necessarily take place in the media's spotlight, so it is essential to establish a rational set of accident management principles well in advance. The paper reports on the findings of a multi-university project that used diverse methods to explore how best to cope with a big nuclear accident. The dangers from a big reactor accident are reviewed, the three diverse methods are explained and the results are set out. These turn out broadly consistent with each other, and strongly indicate that the previous practice of moving people *en masse* was misguided. The requirements for online management information are discussed and ways of providing the necessary data are outlined. It is concluded that it is possible to be much more effective in reducing the harm to people living near a nuclear power station than in the past and to simultaneously significantly reduce the cost of an accident.

Keywords: Chernobyl, cost of consequences, evacuation, Fukushima, J-value, optimal control, relocation

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