13. Summary of Recommendations

Listed below is a summary of the major recommendations made regarding radiological terrorist incidents. Many more specific recommendations and more detail may be given in the text of each specific section of this Report.

13.1 Recognition Capability

Unless the terrorist attack involving radioactive materials is targeted on a known nuclear facility, it is possible that the radiological aspects of the attack may not be recognized by first responders to the scene. Since it is unlikely that all such responding individuals have received the training normally required of workers who are routinely occupationally exposed, it is necessary to establish a mechanism to ensure that these individuals are unlikely to receive an unacceptable level of exposure while at the same time permitting them to perform critical missions during the early phase of a disaster. For this reason, the NCRP recommends that emergency response personnel or response vehicles likely to be the first to respond to a scene for which there has been some indication that the area may be contaminated with radioactive materials, including the site of any explosion, should be equipped with radiation detection equipment that would alert the responders that they are entering a radiological environment. Further, this equipment should be designed in such a way that it can also alert the responders when an unacceptable ambient dose rate or ambient dose has been reached. Suggested alarm levels are discussed in Section 8. These systems need not be complex but they should be rugged and reliable.
13.2 Command and Control

In responding to these incidents it is anticipated that effective response may be hampered by a lack of coordination and control, especially early in the response. It is essential that all responding organizations, even if they have independent authority to act, must coordinate their actions with other responding organizations. During terrorist events, when a national level response is warranted, federal authorities are clearly responsible to take the lead during the crisis-management phase of the incident. However, it must also be clear that, during the consequence-management phase of the incident, the responsibility for public health and safety rests with local or state authorities. Federal authorities are expected to play only a supportive role.

13.3 Communications

It is imperative that clear communications be established with the public regarding these incidents. These aspects are discussed in detail in Section 7. The public should be fully informed of the projected impact of the incident as soon as possible after the incident. It will also be important to include in these projections clear statements of the uncertainties associated with these projections. Information should be withheld only if the consequences of releasing the information would adversely impact the ability to protect public health and safety or if the information would aid the terrorists during the crisis-management phase of the incident.

13.4 Psychosocial Aspects

In consequence-management planning and execution, greater consideration must be given to social and psychological issues. This should not only include attention to immediate psychosocial impacts; it should also involve efforts to prevent and ameliorate the wide range of longer-term psychosocial effects that could be expected after a radiological terrorist incident. Section 5 of this Report discusses psychosocial aspects in more detail.
13.5 Medical Response

As discussed in Section 4, medical response in these emergency situations may be hampered not only by a large number of casualties but by an inordinate fear of radiation, radioactive materials, and contamination. It must be made clear in all phases of training that contamination is never immediately life-threatening and that other considerations take precedence over decontaminating survivors.

Although the prompt administration of potassium iodide (KI) is effective in reducing thyroid exposure to radioiodines, based on recent meta-analysis of epidemiological studies, the value of administration of KI to adults is small. As a result there is little reason to consider large programs to distribute KI to adults in the event of terrorist incidents. However, experience from a number of epidemiological studies as well as more recent experience from Chernobyl indicates that the thyroid of the fetus and child is likely to be quite sensitive to induction of thyroid cancer following radiation exposure. As a result, there is reason to have a plan to distribute KI to pregnant women and to children if a terrorist scenario is suspected to involve a nuclear weapon or some other major release of radioiodine.

13.6 Exposure Guidance

The exposure to emergency responders should be limited, if possible, to occupational exposure limits of NCRP Report No. 116 (NCRP, 1993a) (summarized in Section 8). However, during a severe disaster, because prompt but well-considered actions can potentially save lives and avert significant harm to the public, exposures beyond these levels may be authorized. Even in these cases, principles of justification and ALARA always apply for emergency responders.

In order to protect the public, some form of intervention is almost always required to regain control during or after a radiological emergency. Because all countermeasures have an associated risk, the use of a particular countermeasure involves a risk/benefit analysis, and any decision should be guided by the application of the principle of doing more good than harm (Section 8). This decision must take into account all potential risks, not simply those associated with radiation exposure. Because the risk associated with a particular countermeasure depends on the nature of the countermeasure, the population effected and other circumstances
unique to the situation, it is not possible to set one generally applicable level of averted dose above which a particular countermeasure is justified. However, it is possible to recommend a range of projected averted doses for which each countermeasure should probably be considered (Section 8.6). The upper end of such a range could represent a value of averted dose at which the particular countermeasure is almost always justified. The lower end of the range could be thought of as a value of the averted dose at which the countermeasure is not likely to be justified. Such a range is intended only to provide guidelines for planning purposes and in the event of an actual disaster. Final decisions during a disaster must be made after taking into account all relevant, situation-specific information that is available. Because there are risks associated with most countermeasures, the projected averted dose at which they should be considered is almost always higher than the recommended exposure limits for the public.

13.7 Late-Phase Decision Making

The late-phase response will include cleaning up the area and restoring it to a preexisting condition. The area to be restored may be quite large as will the cost and effort required to accomplish these tasks. Criteria to be used for cleanup and release of the area for “free use” must be based on agreed upon levels. In selecting these cleanup levels, it is essential that the public be fully involved and that they be full participants in these decisions. Factors such as total cost, time to accomplish the tasks, risks associated with cleanup criteria, etc. will be important parameters in such a decision-making process.