

TERRORISM AND THE NUCLEAR SAFEGUARDS ISSUE

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The possibility that terrorists might sabotage nuclear facilities or steal nuclear material to fabricate a bomb or to use as a contaminant has drawn increasing attention from government, the news media, and the public. Scientists, journalists, and novelists warn us that nuclear blackmail by terrorists is the coming threat.

The rapid growth of a civilian nuclear industry, increasing traffic in nuclear material, the spread of nuclear technology, all increase the opportunities for criminals, political extremists, those we call "terrorists," to engage in some type of "nuclear action." Increased public concern with the potential terrorist threat to nuclear programs and the virtual guarantee of widespread publicity may increase the possibilities that such actions will be attempted.

Terrorism has a direct bearing on the nuclear safeguards debate quite apart from assessments as to what any band of would-be nuclear terrorists may or may not attempt, or may or may not be able to do. The safeguards issue is an outlet for unarticulated uncertainties and anxieties about nuclear power, and even about the uncertain times in which we live.

There is undeniably a degree of anxiety in the mind of the public concerning nuclear power. Nuclear power began as a bomb, not as a power plant; the word "nuclear" still recalls Hiroshima not Indian Point. Nuclear power is the most potent, and to many the most sinister, force known to man. Among the scientists and engineers who are supposed to understand nuclear energy, there is obvious disagreement. Some insist

* Testimony before the House Interior and Insular Affairs Subcommittee on Energy and the Environment, U.S. House of Representatives, Washington, D.C., February 26, 1976.

that nuclear power is a safe source of energy. Others warn us that not all of the technical problems have been solved, that society will be compelled to take serious risks to meet the demands of an accelerated program of nuclear expansion. Like most people, I do not possess the requisite technical knowledge to judge whether nuclear technology is "safe," but disagreement within the community of experts cannot be terribly reassuring to a concerned and confused public.

I realize that nuclear *safety* and nuclear *safeguards* are two separate issues, but most people do not make the proper distinction, and concerns about one tend to carry over into the other. Because most people do not fully understand nuclear technology, they are more likely to express their anxiety in terms of safeguards -- the adequacy of the measures taken to prevent diversion, theft, or sabotage, things that terrorists may do -- rather than in terms of the measures taken to insure safety, which are seen mainly as problems of technology that in time the technicians will solve. Man's malevolence is something we all know about. It is demonstrable. Bombs go off in airline terminals without apparent reason.

People are already uneasy about nuclear power and worried about terrorists, therefore it is not difficult to frighten them with a forecast of some kind of "nuclear action" by terrorists. The mere proximity of the words "terrorist" and "nuclear" induces fear. Potential threats to the nuclear industry and the consequences these pose to public safety deserve attention. Unfortunately, there is no clear-cut line between alerting the public to potential threats and "threatmongering." However, I do believe that for reasons ranging from a sincere concern for public safety to personal aggrandisement, some have inadvertently or deliberately exaggerated the terrorist threat. More importantly, I am concerned that this may have the effect of making any sort of "nuclear action" more attractive to existing or would-be terrorists.

Scaring the public about the perceived inadequacies of current safeguards can become a self-fulfilling prophecy. I am not suggesting that the current discussion of nuclear safeguards will give any *new*

ideas to terrorists, but rather that the idea of doing something nuclear becomes more attractive because everyone's attention is riveted on the issue.

The potential nuclear threat posed by "terrorists" encompasses a broad spectrum of mischievous to malevolent actions. These include the creation of potentially alarming hoaxes, acts of low-level symbolic sabotage, the occupation or seizure of nuclear facilities, acts of serious sabotage aimed at causing widespread casualties and damage, thefts of nuclear material, armed attacks on nuclear weapons storage sites, thefts of nuclear weapons, the dispersal of radioactive contaminants, the manufacture of homemade nuclear weapons, and the detonation or threatened detonation of such devices.

The spectrum of potential perpetrators is equally diverse. It may include common criminals, disgruntled employees, political extremists, or simply authentic lunatics. Their motives may be personal or collective. Their objectives may include publicity, sabotage, extortion, causing widespread damage and casualties, or possibly discrediting the nuclear industry by demonstrating that current security measures are inadequate.

It is extremely difficult to assess with any degree of confidence the potential nuclear threat posed by terrorists. Fortunately, we do not have a large number of cases to examine. A few nuclear hoaxes and a handful of incidents involving contamination with radioactive material or sabotage of nuclear facilities represent the range of our practical experience. There have been no actual attempts -- insofar as I know -- to overtly seize a shipment of plutonium or a nuclear weapon, or to assemble and detonate a nuclear bomb. Any predictions about what terrorists may or may not do in the future is conjectural, and quite possibly dead wrong. With this caveat in mind, let me offer the following hunches.

The primary attraction to terrorists in going nuclear is not necessarily the fact that nuclear weapons would enable them to cause mass casualties, but rather the fact that almost any terrorist action associated with the word "nuclear" would automatically generate fear -- or increase the fear that is already there -- in the mind of the public.

There is a great deal of popular mythology about terrorists. They are frequently described as mindless, irrational killers. But terrorism for the most part is not mindless violence. Terrorism is violence calculated to inspire fear, to create an atmosphere of alarm which in turn causes people to exaggerate the strength of the terrorists and the importance of their cause. Since most terrorist groups are small and have few resources, the violence they carry out must be deliberately shocking. Terrorism is violence choreographed for its effect on an audience. Terrorism is theater.

While we cannot rule out the possibility of mass murder or holding a city for ransom with a nuclear weapon, the assembly and detonation of a nuclear bomb appears to be the least likely terrorist threat. Incidents in which terrorists have deliberately tried to kill large numbers of people or cause widespread damage are rare. Terrorists want a lot of people watching, not a lot of people dead -- which may explain why, apart from the technical difficulties involved, they have not already used chemical or biological weapons, or conventional explosives in ways that would produce mass casualties. Mass casualties simply may not serve the terrorists' goals and could alienate the population.

Scenarios involving the deliberate dispersal of toxic radioactive material which could cause few immediate deaths but a greater number of serious and protracted illnesses, a statistical rise in the mortality rate from cancer, and ultimately an increase in the number of birth defects among the affected population do not appear to fit the pattern of any terrorist actions carried out thus far. Terrorist actions have tended to be aimed at producing immediate dramatic effects, a handful of violent deaths -- not lingering illnesses, and certainly not a population of terminally ill, vengeance-seeking victims.

Drawing attention to themselves and their causes, creating alarm, and thereby gaining some political leverage -- which have been typical objectives of terrorists -- may be achieved by undertaking relatively unsophisticated actions, those at the lower end of the spectrum of

conceivable terrorist actions I have described. These would demand less technical skill and risk and also happen to be less dangerous to public safety. But any sort of nuclear action by terrorists would be assured of widespread publicity. It would install fear and create alarm. Almost anyone who is believed to have a nuclear device or who has gained possession of a nuclear facility is a successful terrorist.

Terrorists may try to take advantage of the fear that the word "nuclear" generates without taking the risks or making the investment necessary to steal plutonium and build a working atomic bomb. A well-publicized hoax could be as alarming as actual possession of a real weapon, provided people have no way of knowing that it is a hoax. A well-publicized attack on a civilian nuclear facility, even if the attackers failed in their intended mission, could be almost as alarming to the world as a terrorist success. Anything nuclear could, in the terrorists' plan, be little more than a dramatic backdrop or a prop that guarantees them worldwide attention.

Political extremists have demonstrated that by using terrorist tactics, small groups can achieve disproportionately large effects. They have attracted worldwide attention and publicized their causes. They have created alarm and compelled governments to devote significant resources to protection against terrorist attacks. They have compelled governments to negotiate with them and often to grant them concessions. They have achieved these tactical successes without resorting to mass murder. However, if terrorists should decide that their objectives can only be achieved by taking or threatening hundreds or thousands of lives, and they are willing to do so, the absence of a nuclear industry will not guarantee our security.

Ironically, among those who might contemplate some kind of low-level action against nuclear programs are anti-nuclear extremists whose primary objective would be to bring about their termination. These actions might consist of sabotage designed to delay or prevent construction of new nuclear power plants or the operating of existing ones, occupations or seizures of nuclear facilities to publicize opposition to nuclear programs, thefts or other actions designed to demonstrate to the public that existing security measures are totally

inadequate. Several incidents have already occurred in which the perpetrators were known or suspected to be foes of nuclear power.

On the other hand, actions which could endanger human lives are not likely to appeal to groups whose primary concern is the quality of life. The individual who is willing to use nuclear material to kill hundreds of people in order to make the point that nuclear programs are dangerous is probably an authentic lunatic.

In sum, the spread of nuclear technology and growth in the numbers of nuclear facilities throughout the world will increase the *opportunities* for some type of nuclear action by terrorists. Whether or not terrorists will try to exploit these opportunities, we simply don't know. We must assume that they will, and be prepared to stop them. It is probably prudent to overprotect. At the same time, we should not exaggerate the threat. The potential consequences of serious sabotage, leading to a radioactive release, the fabrication of an illicit nuclear explosive device, or plutonium contamination *are* serious. But I have tried to point out why some of the more horrendous scenarios in which hundreds or thousands of lives might be imperiled appear less likely. There are disincentives, even among those we call terrorists, to carrying out these extreme acts. And they are not easy to accomplish. Planting a bomb at a tourist attraction or seizing hostages in a consulate is a far easier task than destroying a nuclear reactor or making -- not designing -- making a nuclear bomb. We should not overestimate the capabilities of terrorists. They tend to operate at a low-level of efficiency.

We should not assume that adequate safeguards -- adequacy is a subjective judgment -- will dispel all of the anxieties about nuclear power which have found expression in the safeguards issue. And we should not assume that having an adequately safeguarded nuclear industry, or even no nuclear industry at all, will guarantee our security against those willing to commit mass murder.

Terrorists may not be interested in or be capable of building a nuclear bomb. The point is that they don't have to. Within their range of resources and technical proficiency, they may carry out nuclear actions that will give them almost as much publicity and leverage, at

less risk to themselves, and with less risk of alienation or retaliation.

As the nuclear industry expands during the next few years, it is possible that we will witness a growing number of low-level nuclear incidents, hoaxes, low-level sabotage of nuclear facilities, occupations of nuclear facilities, the contamination of symbolic targets with non-lethal radioactive material, perhaps a few fake devices. There may be moments of alarm, but the inconvenience and political repercussions that these incidents produce probably will exceed the actual danger to public safety.

At a far more gradual rate, the possibilities of serious nuclear incidents may increase if only because the number of nuclear facilities in the world and the amount of traffic in fissionable material will increase. These will provide increased opportunities for theft or diversion. The requisite technical knowledge to assemble nuclear devices will also spread. At some point in the future, the opportunity and the capacity for serious nuclear terrorism could reach those willing to take advantage of it. Before then, however, more effective safeguards can be developed that will push that point indefinitely into the future.