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Although there have been a number of threats against nuclear powerplants, there has never been a successful sabotage. GAO conducted a survey of security measures used by powerplant personnel. The results of the survey indicated that the degree of protection varied from plant to plant, and that some of the guard forces had major shortcomings. The differences were largely due to the Nuclear Regulatory Commission's (NRC) past failure to define minimum threat levels against which utilities could build their security systems. New regulations were put into use in March, 1977, 2-1/2 years after being published in the "Federal Register." Investigation of potential guard personnel varied from plant to plant, as did training of the guards. NRC investigators also varied in their inspections. Having established a minimum threat standard, NRC inspectors then checked to see if the powerplants could be protected against it. Before new security systems are approved by NRC, an on-site inspection should be conducted. The new requirements do not specify any upgrading of the quality of the guard force. NRC inspectors should be authorized and encouraged to appraise the systems in terms of whether they can cope with the minimum threat. Interim security regulation actions should be implemented until any new regulations are put into use.  
(Author/SS)

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STATEMENT OF  
MONTE CANFIELD, JR., DIRECTOR  
ENERGY AND MINERALS DIVISION  
BEFORE THE  
SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT  
HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS  
ON  
NUCLEAR POWERPLANT SECURITY

Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to discuss with you today our report concerning the ability of security systems at commercial nuclear powerplants to protect against sabotage. Safeguarding nuclear powerplants from sabotage is very important because the consequences of a successful sabotage attempt could be similar--perhaps identical--to those of the most serious nuclear accident.

The history of sabotage threats and attempts against nuclear powerplants in this country does not present any clear indication of whether the problem has been exaggerated or understated. On one hand, a serious sabotage attempt has never occurred or, at least, has never progressed far enough to present any danger to operating a powerplant in this country. On the other hand, there have been a rather large number of threats made against powerplants. From January 1975 to September 30, 1976, 62 incidents, involving bomb threats, extortion attempts, and actual security breaches, occurred at commercial nuclear

powerplants. Most of these incidents involved unidentified callers who made vague threats of bombs located on powerplant property. Others, however, seemed more serious. In one incident, an individual was arrested for attempting to illegally obtain explosives to use in sabotaging a nuclear powerplant.

Our report does not discuss the probability or likelihood of sabotage, but rather focuses on the vulnerability of powerplants to sabotage and the effectiveness of the Nuclear Regulatory Commission's efforts to protect against it regardless of its likelihood.

During our review we accompanied NRC inspectors as they appraised the security systems at six nuclear powerplant sites. In short, we had two major findings: (1) the degree of protection varied widely from plant to plant, and (2) guard forces, which are the key element of a security system, had major shortcomings which reduced their overall effectiveness.

I can briefly illustrate this by comparing the differences in security systems at two of the plants we visited. One plant was protected by

- magnetic alarms on the gates;
- an infrared alarm system along the plant's perimeter;
- a closed circuit television system which viewed the plant's perimeter;
- a computerized key-card system for monitoring all of the important doors in the plant; and

--an attack resistant guard house with bullet resistant glass, steel plated ceilings, and dual electrical systems.

In contrast, another plant we visited had none of these items but relied on an 8-foot fence topped with barbed wire as its basic physical security system.

The security systems at the other four plants we visited varied significantly also, but fall somewhere between the two I have just described.

These differences result largely from NRC's past failure<sup>1/</sup> to define minimum threat levels against which utilities could build their security systems to protect. In the absence of such a definition, the utilities in essence had virtually complete latitude to set the requirements that they would abide by in protecting their plants.

As you would expect, some utilities imposed much more stringent requirements than others did. Subsequently, NRC inspections to see if powerplants were complying with self-imposed requirements resulted in inequitable and even ridiculous situations. For example, NRC cited a utility for noncompliance because cameras in its closed circuit television system were not working. But other utilities which didn't even have closed circuit television or comparable systems

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<sup>1/</sup>On February 24, 1977, new regulations were published in the Federal Register and became effective on March 28, 1977.

were not cited since there was no universal criteria requiring such systems. In another case, NRC cited a utility because its alarmed fences were not as sensitive as they should have been. Yet, other facilities didn't have alarmed fences and were not cited for not having them.

NRC has been aware of the need for improved security requirements for a long time. In an October 16, 1974, report to NRC's predecessor agency--the regulatory part of the Atomic Energy Commission--we concluded that (1) utilities needed specific guidance on the level of threat that their security systems must be prepared to handle, and (2) performance criteria should be established for security systems. In November 1974, the proposed regulations for powerplant security were published for public comment. These requirements finally became effective March 28, 1977--almost 2-1/2 years after publication.

Later in my testimony I will discuss problems with these new regulations. Before I do I should spend a few moments discussing a major deficiency we saw in guard force programs when we accompanied NRC inspectors.

The background investigations required for some guard forces were much more stringent than for others. Some used employment histories, references, and police checks. One gave applicants psychological tests. On the other hand, another facility only checked with the person's former employer. The amount of training necessary before a recruit could begin working ranged from 120 hours

for two guard forces to 4 hours training for one guard force. In all cases, however, guard forces were required to have both firearms training and general training.

Perhaps the most disturbing information we obtained concerned the annual turnover rate. Three powerplant sites were protected by guard forces that experienced annual turnover rates of 35 to 48 percent. Obviously, the information that most of these former guards possess about the powerplant and its security systems could be most valuable to a potential saboteur.

NRC is well aware of the problems concerning guard forces. Our report discusses four evaluations done for NRC by contractors, which point out major guard force weaknesses and shortcomings similar to those I just mentioned. These evaluations were done in support of a congressionally mandated study to assess the need for a Federal security agency within NRC.

Let me also touch briefly on our concerns with the effectiveness of NRC inspections made to determine the utilities' compliance with security requirements. As a rule NRC does not advise utilities of planned inspections. This means that the security systems can be observed in their normal state. In one instance, however, we found that the unannounced nature of the inspection was compromised to such an extent that the inspection's effectiveness was severely reduced. In this case the inspector arrived at a powerplant in the afternoon, met with plant management officials and

told them he would be checking the locked and alarmed doors-- starting the next morning.

We observed that some inspectors were very aggressive in dealing with utility personnel and checking the security systems during these inspections. Others were not. For example, some inspectors, when checking the alarmed fences, shook each section of fence to see if the alarm rang as it should. Other inspectors tried picking locks, crawling under or climbing over fences, or crawling under the infrared beams, and opening alarmed doors to check the time it took guards to respond to the alarm. Several inspectors quizzed the plant security force to determine if they understood their mission and the plant's security system.

On the other hand, some inspectors merely determined that a particular device was in place and did nothing to find out whether the device worked effectively or even if it worked at all. On one visit, an inspector observed that doors were locked as they should be but did not even make a simple test of the locks' effectiveness. Our auditors, who were hardly professionals at the game, in the presence of the inspector and a security guard, were able to pick the locks and open several doors to vital areas of this plant by using a screwdriver or a piece of wire found on the ground near the door.

We believe that all these deficiencies are related to the fact that NRC had failed to establish minimum threat levels upon which utilities could build their security systems and by which NRC could evaluate the systems. Because of this failure, there is no assurance

that security systems at any powerplant would be able to withstand sabotage attempts by threat levels that are now considered minimum by NRC. Some may be able to, we simply cannot prove it, nor can NRC.

Let me elaborate further on this point. In February 1976, NRC began a special inspection program which assessed all operating plants against a threat level of several outsiders and one insider. This was initiated because of an NRC internal memorandum which set forth a minimum threat level and indicated that if plants could not protect against this level then the security must be presumed inadequate.

NRC inspected all operating powerplants using this minimum threat criteria and found weaknesses at all 43 sites. NRC told us that perhaps none of the sites could meet this minimum threat level. In addition, NRC contracted with Sandia Laboratories to study nuclear powerplant vulnerability. Sandia concluded that present protection at many powerplants "would be inadequate against a sophisticated sabotage attack." Also, a Lawrence Livermore Laboratory study done for NRC concluded that

"\* \* \* the combination of guard forces and physical security systems presently used at nuclear facilities was found to be unable to counter a threat of several armed outsiders."



During our visits to the six sites we found no evidence to contradict conclusions of the special inspections, the Sandia study, or the Lawrence Livermore study. Moreover, we have no reason to believe that any other site would have produced different results. The sites we visited were selected based on the NRC inspection schedule. To illustrate this point, as a result of the special inspections, NRC selected 9 sites which it considered to be the "worst" sites. We visited only one of these sites. Since protection against a specific threat level is not now required, it seems abundantly clear that many--perhaps most, maybe all--plants may not be able to protect at this time against such threat levels as I have described.

Now I would like to discuss the future of powerplant security. The regulations recently issued by NRC do offer the opportunity to get the program on the right track. They set forth a minimum threat level of several outsiders and one insider by which security systems can be built and inspected. Whether NRC takes advantage of this opportunity depends, we believe, on how it deals with the following three points.

First, the proposed regulations contain a provision which would permit the utilities to substitute security systems completely different from those specified in the regulations as long as NRC finds the substitute acceptable. This provision will permit NRC reviewers to use discretion and judgment in approving security plans. We believe that their decisions are too important and too far-reaching to be made

independently and without visiting the powerplant site, as is done now. Consequently, we believe that the reviewers should visit each powerplant and obtain the views of the regional inspection office before approving the security plan. Obtaining such comments should lead to greater inspector aggressiveness and responsibility than exists now.

Second, the greatest single shortcoming of powerplant security is the quality of guard forces. Unfortunately, the proposed requirements do not specify any upgrading actions. We believe that NRC must develop, as quickly as possible, methods for making major improvements to guard forces in such areas as turnover rates, use of firearms, and background investigations and must direct the utilities to immediately make such improvements.

Third, NRC inspectors should be authorized and encouraged to go beyond the utilities' plans when looking at security systems and appraise the systems in terms of whether their performance can meet the minimum threat. This would give the NRC program the capability to catch mistakes or oversights made in approving the security plan, as well as the ability to evaluate the system in light of changes at the powerplant or in its surroundings. More importantly, it would serve to emphasize to the inspectors the necessity to check the performance and not just the existence of security systems.

Our report sets forth recommendations to the Chairman of the NRC which we believe will provide further improvements in powerplant security. One of these recommendations calls for immediate action to increase interim protection at powerplants.

Such interim actions are discussed in our report. They include (1) promptly alerting plant management of the serious deficiencies in security systems at existing powerplants, (2) specifying interim measures that powerplant management can take to strengthen security in line with the proposed regulations, (3) improving local law enforcement coordination, and (4) increasing the number of guards.

NRC has taken exception to this recommendation because it believes the new security regulations will provide the necessary protection. However, since the utilities are permitted by the recently enacted regulation up to 1-1/2 years to comply with several significant provisions involving construction or installation of equipment, we still believe that interim measures are necessary.

We cannot believe that this Nation should be required to wait up to 1-1/2 years for full compliance with the new requirements before more is done. Interim measures can do much to increase the security of the systems until full compliance is in effect. Further, as our report points out, full compliance with the new regulations does not, to our way of thinking, go far enough. Even if NRC moves immediately to implement our additional recommendations, some time will elapse. To us, this is all the more reason for NRC to take immediate action to implement interim protective steps.

In concluding, I would like to say that the GAO will continue to monitor NRC's program for nuclear powerplant security to alert the Congress to significant issues that may warrant your consideration.

Mr. Chairman, this concludes my prepared statement. We will be glad to answer any questions you might have at this time.