

December 17, 2001

The Honorable James M. Jeffords  
United States Senate  
Washington, D.C. 20510

Dear Senator Jeffords:

I am responding on behalf of the Commission to your letter of November 20, 2001, forwarding questions concerning the security of the Nation's commercial nuclear facilities. Although nuclear power plants are among the most hardened and secure civilian facilities in the United States, the recent attacks have focused attention on the need to review policies and practices related to safeguards and physical security measures for civilian nuclear facilities.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC advised nuclear power plant licensees to go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. For the longer term, I, with the full support of the Commission, have directed the NRC staff to thoroughly reevaluate the NRC's safeguards and physical security programs. This reevaluation will be a top-to-bottom analysis involving all aspects of the Agency's safeguards and physical security programs.

Given the nature of the attacks on September 11, the identification of any necessary adjustments to the safeguards and physical security measures for civilian nuclear facilities must involve consultation and coordination with other U.S. national security organizations. The NRC is currently interacting with the Federal Bureau of Investigation, other intelligence and law enforcement agencies, and the Department of Defense to ensure any changes to the NRC's programs are informed by pertinent information from other relevant U.S. agencies.

Because the NRC's reevaluation is ongoing, the enclosed answers to your questions are founded on the information that is available at this time. If you have further comments or questions, please feel free to contact me.

Sincerely,

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Richard A. Meserve

Enclosure: Responses to Questions

Identical letter to:

The Honorable James M. Jeffords  
United States Senate  
Washington, D.C. 20510

The Honorable Hillary Rodham Clinton  
United States Senate  
Washington, D.C. 20510

The Honorable Jon S. Corzine  
United States Senate  
Washington, D.C. 20510

The Honorable Harry Reid  
United States Senate  
Washington, D.C. 20510

**RESPONSE TO QUESTIONS**

Question 1: *Immediately after the September 11 terrorist attack, the NRC recommended but did not require nuclear power plants to go to a higher level of security.*

- a) *Could you please explain why the Commission did not require higher security.*
- b) *How did the NRC confirm whether plants moved to a higher security level?*
- c) *In broad terms, could you describe what steps this involves?*
- d) *Are security guards working overtime to meet these requirements? If so, what steps are the NRC recommending to reduce possible fatigue effects from long periods of overtime?*
- e) *Has the NRC recommended supplementing guard forces with National Guard troops?*

Answer:

- 1a. The NRC recommended on September 11, 2001, that licensees move to a higher security level. This recommendation was in the form of a Threat Advisory. A Threat Advisory provides a vehicle for communication between the NRC and its licensees when a rapid response is required. As discussed below, the Threat Advisory achieved the desired response and, consequently, the NRC did not find it necessary to issue orders. Had the Commission found it necessary to direct action by particular licensees it could have promptly issued individual orders to them.
- 1b. The licensees reported to the NRC that they had implemented the higher level of security as urged by the Threat Advisory. This was later verified by the NRC resident inspectors, who are stationed at each commercial nuclear plant site with an operating license. There have also been audits of the heightened security measures at all NRC licensed operating and decommissioning nuclear plants by NRC inspectors from the regional NRC offices.
- 1c. The heightened security stance generally included increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and additional limitations on access of personnel and vehicles to the site, among other measures. On October 6, the NRC issued a safeguards advisory delineating certain prompt and longer-term additional actions to strengthen licensee capability to respond to a terrorist attack at or beyond the design basis threat. Licensees are currently complying with this advisory.
- 1d. The security guards are working overtime to meet these requirements. Licensees are required by 10 CFR Part 26, Fitness for Duty Programs, to have in place a program which provides reasonable assurance that nuclear power plant personnel will perform their tasks in a reliable and trustworthy manner. Fatigue is one of the factors which is addressed under this program. NRC inspectors have closely scrutinized the security

measures in place at the Nation's commercial nuclear power plants and have not identified a noticeable decline in the effectiveness of the security forces as a result of fatigue.

- 1e. On September 26, 2001, the Chairman sent a letter to the Governors of those States which have sensitive commercial nuclear facilities. The purpose of the letter was to explain the actions taken by the NRC and its licensees to augment security after September 11 and to note limitations on licensee capabilities to deal with beyond design basis threats. The letter noted that as the security situation unfolds, State resources might be needed to supplement licensees' capabilities. However, the Commission did not request such supplementation. The Commission believes that the individual Governors, working in consultation with their security advisors and federal law enforcement authorities, can best determine where to deploy National Guard assets to protect critical infrastructure.

Question 2: *Several months ago, the NRC approved the start of a pilot test program to replace the current security program.*

- a) *Does the NRC believe this is an appropriate time to test new security training programs?*
- b) *Why wouldn't the NRC's resources be better utilized by improving the program already in place, the so-called Operational Safeguards Response Evaluation (OSRE) program, which has a strong NRC oversight component?*

Answer:

- 2a,2b. At this time, the NRC believes it is inappropriate to conduct force-on-force exercises due to the conditions of heightened security. Therefore, force-on-force exercises have been temporarily suspended. As previously noted, a thorough review of the NRC's physical security and safeguards programs was initiated shortly after the September 11 attacks.

Before September 11, the Commission agreed to a one-year pilot of the Safeguards Performance Assessment (SPA) program. The intent of the SPA pilot was to determine if a more performance-based approach, making greater use of licensee resources while permitting more frequent NRC evaluation of force-on-force exercises, could be developed. During the conduct of the SPA pilot, the NRC would continue OSRE inspections at a rate of six per year, which would be combined with eight NRC-evaluated SPA inspections.

It is important to note that the frequency of NRC-evaluated exercises would increase from once every eight years under the OSRE program to triennially under SPA program. The performance of more frequent periodic drills and exercises under the SPA program could enhance our licensees' capabilities to protect against the design basis threat of radiological sabotage. Thus, the Commission approved a one-year trial of the SPA program, subject to close NRC oversight and evaluation. A final Commission decision

regarding the method of conducting force-on-force testing would follow formal evaluation of the pilot program and the continuing OSRE program.

Question 3: *Media reports indicate nearly half the nuclear power plants failed their OSRE exercises.*

- a) *What are the biggest causes for this failure?*
- b) *Is it a lack of training, a lack of equipment, and/or poor tactics?*
- c) *What are steps the NRC is taking to improve the performance of licensees in these tests?*
- d) *Does the NRC assess fines against licensees that fail these tests? If not, why not?*

Answer:

3a,3b. A typical OSRE has several components, including table top drills leading to four force-on-force exercises in which the attacking force attempts to exploit any vulnerabilities the NRC security specialists identify in the plant's protective strategy. The attacking force is credited with detailed knowledge of the plant's lay-out, vulnerabilities and security force defense plans. The overall goal of the OSRE is to improve the efficacy of facility security by identification and correction of weaknesses.

In 37 of 81 OSRE's conducted between August 1991 and August 2001, the NRC identified weaknesses.<sup>1</sup> In those plants in which a weakness was found, the attacking force was typically able in one of four exercises to reach a target set and simulate destruction of that equipment. In general these weaknesses occurred due to deficiencies in the licensee's contingency response plan, in training, or in executing the plan. No one issue dominates the weaknesses noted.

It is agency policy for NRC licensees to address identified weaknesses immediately through the implementation of compensatory measures and, where appropriate, permanent corrective actions. The NRC believes that the program has served an important function by contributing to the identification of areas for improvement in the licensees' security programs. The tests are difficult because they are designed to exploit potential vulnerabilities revealed in the table top drills. They do not necessarily reflect the likelihood of success by a less informed attacking force.

3c. Licensees are required to correct deficiencies in their security programs, including deficiencies identified during OSRE force-on-force exercises. In addition to OSRE exercises, NRC inspectors routinely inspect licensee security programs as part of the baseline inspection program. NRC has the statutory tools necessary to ensure that any security deficiencies are corrected in a timely fashion.

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<sup>1</sup>For the 15 OSREs conducted between April 2000 and August 2001, weaknesses were identified in 9 of 59 exercises or 15 percent of the time. Eighty-five percent of the time the attacking force was defeated.

- 3d. The NRC has never assessed fines against licensees for weaknesses uncovered in an OSRE. In 1988, in discussing a similar program carried out by the NRC at category 1 fuel cycle facilities (facilities that handle weapons-grade highly enriched uranium) the Commission stated: "The exercises would demonstrate the guard force state of readiness and test the effectiveness of delay mechanisms, alarm and communication systems, response times, deployment of response forces, firing skills (simulated), and tactical maneuvers. The results would be used to determine whether additional training or security system improvements are needed. The exercises are not intended to be viewed in terms of 'pass' or 'fail.'"

Since April 2000 when the Commission adopted its revised reactor oversight process, the NRC staff has applied its significance determination process to OSRE inspection results and has informed the public of the significance of weaknesses without divulging any details that might aid a terrorist. In January 2001, the Commission concluded that subsection (a) of 10 CFR 73.55 lacked the clarity necessary for consistent enforcement, and directed the staff to pursue rulemaking to clarify the provisions of 10 CFR 73.55 (a) and to refrain from enforcement action based on 10 CFR 73.55 (a) as a result of force-on-force exercises until further Commission direction is provided.

Question 4: *In the NRC's long-term budget forecasting, is the NRC budgeting for continued use of the OSRE program?*

Answer:

Yes, the NRC's long-term budget includes funds for at least six OSRE inspections per year, with additional funds which can be used either to support the OSRE program or the SPA program. The results of the SPA pilot (if conducted) will help determine the future direction of NRC's activities in this area.

Question 5: *To ensure that safety plans can adequately protect a nuclear facility, the NRC requires additional force-on-force exercises to verify the ability of security forces to implement the security plans. Does the NRC have a comparable program to ensure that emergency response plans can be successfully implemented in the event of an accident? If so, does this involve coordinated exercises with all local, state and federal emergency responders?*

Answer:

The NRC requires in 10 CFR 50.47, "Emergency plans", 10 CFR 50.54, "Conditions of licenses", and in 10 CFR 50 Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities", that commercial plant licensees have and maintain a comprehensive emergency response plan and that exercises be conducted at each site at least every 2 years to evaluate emergency response plans. This involves a coordinated exercise with State and local authorities having a role under the plan. Licensees routinely conduct more frequent drills to ensure their employees are familiar with their emergency response duties.



Question 6: *Does the NRC require state and local governments to develop evacuation plans to respond to a potential release from a nuclear power plant? If so, how often are these plans updated to reflect demographic changes around the plants? Are only the communities near the plants involved, or are communities that could be exposed to a contamination plume far from the plant considered?*

Answer:

The NRC requires in 10 CFR 50.47, and in Appendix E to 10 CFR 50, that emergency response plans include a range of protective actions for the plume exposure pathway emergency planning zone (EPZ), an area about 10 miles in radius, and the ingestion exposure pathway EPZ, an area about 50 miles in radius. The licensees' plans are also to include a time estimate for evacuation of the plume exposure pathway. Criteria for protective actions are further defined in NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants". These criteria include expectations that State and local organizations establish a capability for implementing protective measures. The State and local plans to implement protective measures for the plume exposure pathway are to include maps showing evacuation routes, evacuation areas, and relocation centers in host areas beyond the plume exposure EPZ. State plans are to also include protective measures to be used for the ingestion pathway EPZ, including methods for protecting the public from consumption of contaminated foodstuffs.

The size of the emergency planning zones represents a judgment on the extent of detailed planning which must be performed to assure an adequate response base. Detailed planning within the EPZ provides a substantial base for the expansion of response efforts in the event that this proved necessary. In accordance with requirements in Appendix E of 10 CFR 50, licensees are to have provisions that ensure emergency plans are kept up to date. Furthermore, 10 CFR 50.54(t) requires that all elements of the emergency preparedness program be reviewed at least once every 24 months. Accordingly, a consideration of changes in the demographics around the plant would be expected to be included in the licensees reviews conducted in accordance with these requirements.

The NRC does require that adequate emergency plans, including evacuation plans, be in place for each licensed nuclear power plant, and the NRC's determination of adequacy is based in part on findings made by the Federal Emergency Management Agency (FEMA). State and local governments maintain evacuation plans to respond to a potential release. These plans are usually exercised during the required biennial exercises. Typically the local governments which participate in the exercises fall within a ten mile radius of the nuclear facility. State emergency plans generally have provisions for extending protective actions as needed.

Question 7: *We understand that there may be as few as 10-12 guards, on average, at facilities in your jurisdiction. Is this true, and is this adequate in your opinion? Is there a federal requirement, applied consistently at all facilities in your jurisdiction, for a certain number of guards? For the background and training of these guards?*

Answer:

The site contingency response plan delineates the number of armed responders and guard force necessary to protect against the design basis threat, and the OSRE force-on-force exercises provide a test of the adequacy of those forces. Corrective actions identified via the OSRE program must be addressed. Section 73.55(h)(3) of 10 CFR requires a nominal force of ten guards, and no less than five, but each licensee has established site-specific commitments in its security plan based on the size and layout of the facility. The details of the site-specific commitments are Safeguards Information.

The security forces at nuclear facilities are well-trained, well paid, and have high retention rates. This is a sharp contrast to airport security before the recent improvements. The background and training of the guards is specified in 10 CFR Part 73 and Appendix B to 10 CFR Part 73. These provisions address such things as physical and mental requirements, authority of guards, the use of deadly force, tactics, site security systems, communication system operation, and weapons training, including demonstrating proficiency with weapons to be used by that guard.

In response to the terrorist attack of September 11, 2001, the NRC has initiated a thorough review of the safeguards and physical security programs. This effort will include input from the national security organizations, the Office of Homeland Security, the FBI, intelligence and law enforcement agencies, the Department of Defense and others to evaluate the level of threat to which civilian nuclear facilities must be able to respond. Based on this review, if the NRC determines that additional or revised safety or physical protection measures or requirements need to be taken, the NRC will take appropriate actions to implement those measures.

Question 8: *How many facilities in your jurisdiction are now protected by National Guard personnel? Are there any facilities that have refused the services of the Guard? If so, what reason did the licensees provide?*

Answer:

Approximately 12 of the 63 operating nuclear power plant sites are currently protected by National Guard personnel. One of ten decommissioned nuclear power plants (Haddam Neck in Connecticut) is currently protected by National Guard personnel. Although the NRC is not typically involved with communications between States and NRC-licensed facilities, the NRC is not aware of a situation where a licensee has refused a request by a State to place National Guard troops at its facility. A number of States have initiated a dialog with NRC licensees to discuss options for enhancing the

physical security at their facilities. The NRC is aware that those discussions have involved consideration of the National Guard.

Question 9: *How are the civilian guard forces at facilities in your jurisdiction armed? Is there a federal requirement applied consistently at all facilities in your jurisdiction for armed personnel?*

Answer:

The weapons used by the guard forces are generally comparable to those weapons used by local law enforcement officers, although in some States there are significant limitations on weapons which private security forces can possess. 10 CFR 73.46 has requirements for the weapons (at a minimum) to be carried by guards and Tactical Response Team members.

The NRC has requested legislation which would allow nuclear facility guard forces to use weapons comparable to those available to the Department of Energy's private security forces, notwithstanding State law restrictions. The Commission has also sought legislation which would authorize the use of deadly force if necessary to protect the facility. Without federal legislation, there are State laws at some sites which limit the types of weapons permitted and the use of deadly force. We strongly urge prompt Congressional action on our legislative proposals.

Question 10: *What is the average number of guards at decommissioned facilities? How does the security at these facilities compare to active facilities? Do you think security at these facilities is adequate?*

Answer:

Specific details on guard forces are Safeguards Information. Currently there is no federal requirement for a certain number of guards at decommissioning reactors, but rather that the facility demonstrate the capacity to provide adequate protection. Decommissioning facilities typically have a much smaller area to protect the operating facilities and a smaller guard force. However, the guard force meets the same background and training requirements as at operating plants.

In response to the terrorist attack of September 11, 2001, the NRC has issued threat advisories identifying additional security measures at decommissioning facilities and has verified that these resources are in place. In addition, the NRC has begun a thorough review of the safeguards and physical security programs that will encompass the decommissioning facilities. This effort will include input from the national security organizations, the FBI, intelligence and law enforcement agencies, the Office of Homeland Security, the Department of Defense and others to evaluate the level of threat to which civilian nuclear facilities must be able to respond. Based on this review, if the NRC determines that additional or revised safety or physical protection measures

or requirements need to be taken, the NRC will take appropriate actions to implement those measures.

Question 11: *Does the current design basis threat assume that something the size of a tractor-trailer truck may be utilized to carry explosives to a facility? Does it assume that water-borne threats to reactors located near rivers or oceans may occur?*

Answer:

The current design basis threat for radiological sabotage at nuclear power reactors includes a design basis vehicle bomb, with sensitive non-public details concerning vehicle weight, speed, and explosive charge size. The specific numbers for the design basis vehicle bomb were selected based on an analysis of relevant vehicle bombing attacks, including the type of vehicle used and the estimated size of the explosive charge, that occurred around the world over several decades. The design basis vehicle bomb represents a reasonable characterization of a vehicle bomb threat. The specific numbers are protected from public disclosure as Safeguards Information and can be provided under separate cover. The current design basis threat does not include a waterborne component. Our ongoing top-to-bottom reevaluation of the agency's safeguards and physical security programs include analyses of the design basis vehicle bomb and waterborne threats.

Question 12: *Based upon what you know now, do you think the design basis threat should be updated? Do you have the authority to perform the update now? If so, what is your time frame?*

Answer:

Yes, the design basis threat should be reviewed and updated and we have put in place a process for doing so. The staff has initiated a number of actions in response to the September 11 attacks. These include a reassessment of the threat environment to examine the design basis threat. Further, this review will be conducted in coordination with the Office of Homeland Security, Department of Energy, Federal Bureau of Investigation, and other Federal agencies, and could include identification of any necessary changes to the current design basis threats. An additional dimension to this current effort may be the identification of threats beyond the design basis threat, i.e., threats that our licensees may not be fully able to protect against without assistance from local, State or Federal authorities. The Commission has the authority and can direct staff to initiate rulemaking to formally revise 10 CFR 73.1 and modify the design basis threat as appropriate. It is anticipated that this effort will extend well into the year 2002.

Question 13: *New information has recently come to light regarding the vulnerability of nuclear power plants to attack by air. What are the measures the NRC is considering to protect against such threats?*

Answer:

The NRC has been in regular communication with other federal agencies, most specifically the Federal Aviation Administration and the Department of Defense, which have acted more than once to protect airspace above nuclear power plants. The Aviation and Transportation Security Act of 2001 will also provide additional protection against air attacks on all industrial facilities, both nuclear and non-nuclear. The NRC believes that the nation's efforts associated with protecting against terrorist attacks by air should be directed toward enhancing security at airports and within airplanes, and not toward seeking to defend all potential targets of such terrorism.

Question 14: *Since September 11, have there been any credible threats received against any nuclear power plants in the United States and if so, what measures were taken to protect against those threats?*

Answer:

There have been no credible threats against any nuclear power plants in the United States. One threat to a nuclear power plant, based on classified intelligence, was initially assessed as credible, requiring a timely response. NRC coordinated the response to this threat with the licensee, Federal Bureau of Investigation, the Department of Defense, and other Federal agencies. The response included licensee, state, and Federal measures being taken for an appropriate period of time. The threat subsequently was determined to be not credible.

Question 15: *What are the actions the NRC is taking to ensure that proper background checks have been conducted of all staff at all nuclear power plants across the country?*

Answer:

In order to be authorized for unescorted access at a nuclear power plant, an individual must undergo a background screening and investigation pursuant to 10 CFR 73.56, and such workers are subject to ongoing fitness-for-duty requirements. The screening criteria include: (1) a background investigation designed to identify past actions which are indicative of an individual's future reliability within a protected or vital area of a nuclear power reactor; (2) a psychological assessment designed to evaluate the possible impact of any noted psychological characteristics which may have a bearing on trustworthiness and reliability; and (3) behavioral observations, conducted by supervisors and management personnel, designed to detect individual behavioral changes which, if left unattended, could lead to acts detrimental to the public health and safety. In accordance with 10 CFR 73.56, the background investigation includes employment history, education history, criminal history, military service, and credit history, as well as a psychological evaluation, interview of developed references, and fitness-for-duty testing. Inspections are routinely conducted by the NRC to verify that licensees are complying with these requirements. The inspection results have assured the NRC that these requirements are being uniformly complied with, and proper background checks have been conducted. In addition, since September 11, 2001, the FBI has provided to the NRC frequently updated lists of individuals who may have ties or

information related to terrorist activities. At the request of the FBI, the NRC provided these lists to the nuclear power plants, the nonpower reactor facilities, decommissioning plants, and selected fuel facilities to be checked against utility employment and visitor records. The Nuclear Energy Institute has also been provided the lists to be checked against a database of temporary nuclear utility workers. All results are being provided by the NRC to the FBI for resolution. To date, all potential matches have been resolved through the FBI.