Project On Government Oversight
Watchdog since 1981

Nuclear Power Plant Security: Voices from Inside the Fences

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Table of Contents

Appendices

Appendices A-Q:

Statements by Security Guards.

Appendix R:

August 27, 2002 Letter to The Honorable James M. Jeffords, Chairman, Senate Committee on Environment and Public works from NRC Chairman Richard Meserve.

Appendix S:

Nuclear Energy Institute Advertisements: "More Than Strong Fences," January 16, 2002 and "Vigilant," June 5, 2002.

Appendix T:

September 3, 2002 Letter to Commissioner Edward McGaffigan, Jr., Nuclear Regulatory Commission, from Harold W. Keiser, President and Chief Nuclear Officer, PSEG Nuclear LLC.

Appendix U:

June 15, 1982 Letter to All Licensees of Operating Plants, Applicants for an Operating License, and Holders of Construction Permits from Darrell G. Eisenhut, Director, Division of Licensing, Office of Nuclear Reactor Regulation, Nuclear Regulatory Commission.

Appendix V:

Collective Bargaining Agreements for Security Guards and Pay Scales for Janitors at the Same Plants.

Appendix W:

January 26, 2000 Memorandum from Teri M. Wigger, Regional Investigator, Region II, Occupational Safety and Health Administration; and February 8, 2000 Letter to Patricia B. Marmon, Director EEO/AA Programs, The Wackenhut Corporation from Patricia K. Clark, Regional Administrator, Occupational Safety and Health Administration.

Appendix X:

Salary Comparisons.

Executive Summary

Security guards at only one out of four nuclear power plants are confident their plant could defeat a terrorist attack, according to interviews conducted for this report by the Project On Government Oversight (POGO). The guards say morale is very low and that they are under-equipped, under-manned, and underpaid.

More than 20 security guards protecting 24 nuclear reactors (located at 13 plants) were interviewed during POGO's investigation into nuclear plant security. The guards' major concerns:

Under-manned: Prior to 9/11, the Nuclear Regulatory Commission (NRC) required only five to ten security guards on duty per nuclear reactor. Since then, the NRC has ordered the utilities to minimally increase the guard force. But more than half the guards POGO interviewed say their plants are relying on increased overtime of the existing guard force — up to six consecutive days of 12-hour shifts — rather than hiring more guards. Guards raised serious concerns about fatigue. While a few guards said their plants have increased the guard force — one plant has tripled the number of guards — most interviewed believe that they are still below adequate levels to defeat a real terrorist attack. According to one guard, "If an attack took place, most of the guards would run like hell."

Under-trained: Nuclear industry executives have repeatedly claimed that guards receive 270 hours of training before being posted; 90 hours per year to re-qualify with their weapons; and 30 hours per year in antiterrorist tactical exercises. None of these claims appear to be true. Most guards interviewed train with their weapons only once per year for two to three hours during their annual weapons qualification. Most also have had no training or practice in shooting at a moving target. "Tabletop" exercises are so rudimentary that utilities use red and blue colored clothes pins to depict locations and tactics of guards and terrorists.

Under-equipped: Many of the guards believe they are not equipped with adequate weaponry. The power and range of weapons provided to many of the guards is vastly inferior to the weapons known to be used by terrorists, due in part to restrictive state laws. According to one guard, terrorists will come armed with automatic weapons, sniper rifles, and grenades and the guard force "would be seriously outgunned, and won't have a chance."

Underpaid: Low wages and inadequate health, disability and other benefits are causing turnover in the guard force at some plants as high as 70-100% over the 3½ year life of a labor contract. At six nuclear facilities identified by POGO, security guards were being paid $1 to $4 less per hour than custodians or janitors. Guards also often earn less than workers in their area who face substantially less risk such as funeral attendants, manicurists, and aerobic instructors.

Unsure: Nearly all of the guards interviewed raised concerns about the lack of guidance on the use of deadly force. Guards are currently restricted from using deadly force unless an intruder is wielding a weapon or threatening the life of an individual. If a suicidal terrorist with a backpack (possibly containing explosives) jumped the fence and headed straight for a spent fuel pool or

reactor, the guard could only observe and report the event. One guard summed up the problem stating: “If you pull the trigger, you’re on your own and you’ll need a good lawyer.”

Since 9/11, the NRC has done little to bolster security at the power plants:

- The NRC requires utilities simply to delay attackers until outside help arrives from local sheriff departments, state police, or the FBI. However, the NRC is only just recognizing the chasm between how long plant security can hold off an attack and when outside responders could arrive. Tabletop exercises begun by NRC in July, 2002, indicate that it would take one to two hours for outside responders to arrive with SWAT capability. NRC’s performance tests have shown that successful terrorist attacks are over in between three to ten minutes.

- The NRC has failed to toughen security regulations. Current regulations reportedly only require nuclear plants to be prepared for an attack by three terrorists and one insider — a clearly inadequate scenario in light of the coordinated attack by 19 terrorists on 9/11. Recommended improvements have languished at the Commission.

- The NRC issued an order in February, 2002, that required utilities to make incremental upgrades in security by August, 2002. Those upgrades include minimal increases in the guard force, requirements that guards carry their primary weapons while on patrol (i.e. shotgun or rifle), and the movement of truck bomb barriers farther from reactor target sets.

- The NRC has not conducted force-on-force performance tests since 9/11. The NRC claims this is due to its current high-alert status. However, both the Department of Defense and the Department of Energy, which are also at high-alert status, have continued to test the performance of security over the past year. Prior to 9/11, power plants failed the mock force-on-force tests almost half the time according to closed-door Congressional testimony by NRC officials. POGO found that even those tests are seriously dumbed-down.

In addition to security guards, POGO also interviewed Army and Navy Special Forces personnel who conduct force-on-force tests, current and former NRC and other officials, a National Guard commander, and contractors. POGO's report is based on information and documents gathered from these sources. POGO briefed officials at the NRC on its findings.

Foreword

The Project On Government Oversight (POGO) is an investigative organization that works with inside sources to improve public policy. Founded in 1981, POGO is a politically-independent, nonprofit watchdog that strives to promote a government that is accountable to the citizenry. This is our second report on inadequate security at nuclear facilities.

In early 2001, POGO began its first investigation into nuclear security, after more than a dozen high-level Department of Energy (DOE) security experts came forward with concerns regarding inadequate security at the DOE's nuclear weapons facilities.

Just prior to September 11, 2001, POGO completed that investigation, concluding that the nation's ten nuclear weapons facilities, which house nearly 1,000 tons of weapons-grade plutonium and highly-enriched uranium, regularly fail to protect this material during mock terrorist attacks. The resultant report, "U.S. Nuclear Weapons Complex: Security at Risk," was released in October 2001.

Since the report's release, Congress, the General Accounting Office, and several federal agencies have undertaken reviews of POGO's findings which are as yet on-going. In the meantime, the Department of Energy has put into motion a plan to relocate tons of bomb-grade nuclear materials from one of three facilities POGO profiled for immediate attention. The facility, known as Technical Area 18, is located in an indefensible canyon at Los Alamos National Lab in New Mexico. Also since the report's release, more than 30 additional security experts and inside sources at the Department of Energy have contacted POGO to reveal documents and information about security weaknesses. As a result, POGO continues to expose the lack of security of our nation's nuclear weapons facilities.

Because of this work at nuclear weapons facilities, several current and former guards from commercial nuclear power plants began contacting POGO in early 2002 with similar concerns about inadequate security at the nation's nuclear power plants. POGO takes no position on nuclear power.

In April, POGO took a group of nuclear power plant security guards and former guards to brief nine congressional offices and committees about their concerns.

POGO then expanded its investigation, randomly contacting guards at additional facilities. In all, POGO interviewed over 20 guards protecting 24 reactors at 13 sites (both active and decommissioning). This represents more than one in five, or 23%, of the total reactors. These guards work at nuclear power plants across the country – in all four of the Nuclear Regulatory Commission (NRC) Regions. Most of these guards asked that neither they nor the utility that runs their plant be identified so as not to expose ongoing vulnerabilities, and because of the fear of reprisal from their employers. They are not "anti-nuclear." In fact, most of them have worked at nuclear power plants for more than ten years, many for most of their careers.

This report is based on the security concerns of over 20 guards interviewed by POGO. While these guards are certainly a small percentage of the security force working at nuclear power plants, it is surprising and unusual that this many were concerned enough either to contact POGO or be willing to be interviewed and provide their timely and on-the-ground testimony, in most cases in written statements. These guards all said they have come forward because they are hoping to help inform policymakers of the current security inadequacies by working with POGO. POGO did not use a questionnaire during the interviews, in an effort to avoid leading or directing the conversations, and obviously cannot independently verify a good deal of their information. There have been no independent analyses by the Inspector General or the General Accounting Office evaluating the security concerns of nuclear plant guards since 1977. In an effort to corroborate these concerns, POGO consulted security specialists with military backgrounds who test and evaluate security at commercial reactors, current and former NRC and other federal security officials, contractors, and a National Guard supervisor who is supplementing security at a nuclear plant. These experts shared most of the guards' concerns about security at the nation's nuclear power plants. There are clearly common threads that run through the concerns addressed in this report.

A number of other people assisted with this report as well, including current and former Army and Navy Special Forces and DOE and NRC security experts who asked that their names not be revealed, as well as nuclear experts such as Dave Lochbaum of the Union of Concerned Scientists. POGO attempted numerous times to meet with nuclear industry representatives, but were repeatedly put off.

At the conclusion of our investigation, POGO briefed two NRC officials, including a Commissioner, of POGO's findings. There appears to be a growing awareness among some at the NRC about many of the problems raised by the guards, and an acknowledgment both that the NRC has relied far too much on the nuclear industry to provide insights and that there has been virtually no direct communication between the NRC and guard forces. Unfortunately, there is not unanimity at the Commissioner level about how and whether to address these concerns. It is clear that the NRC is not on a fast track to correct these problems. Currently, the NRC also vigorously opposes Congressional efforts to upgrade security. (Appendix R)

Homeland Security Director Tom Ridge has encouraged the open discussion of our nation's vulnerabilities as the only way to push intransigent bureaucracies to make real security improvements. During a speech at the White House, he stated "... we will operate from a few basic principles. First, candor. No one should be wary of coming forward when they see a problem. It's the only way to define a solution. The urgency of our task dictates candor about our challenges and confidence in our ability to solve them."[1] This report is offered in that spirit.

[1] http://usinfo.state.gov/topical/pol/terror/01100810.htm Remarks by Governor Tom Ridge at his Swearing-In Ceremony as Director of the Office of Homeland Security, October 8, 2001.

Introduction

There are 65 commercial nuclear power plants in 31 states operating 103 reactors. These plants generate about 20% of the nation's electricity. There are also 12 decommissioning reactors in the nation. While these reactors no longer produce electricity, they still have tons of radioactive spent nuclear fuel which remains stored in spent fuel pools and casks. Spent fuel pools are where the spent fuel rods are removed from reactors and placed in 45 foot deep pools of water for temporary storage. The Nuclear Regulatory Commission (NRC), an independent federal regulatory agency, is responsible for licensing and regulating these nuclear facilities and nuclear materials.[2]

As part of this responsibility, the NRC has the obligation to ensure that nuclear power plants are operated in a manner that protects public health, public safety and the environment. This includes the obligation to establish requirements which ensure that nuclear facilities are protected against acts of radiological sabotage and theft of nuclear material. To accomplish this, the NRC requires utilities operating nuclear reactors to submit security plans that it must approve.[3] The vast majority of these utilities subcontract with private guard force companies to provide the protective services.

There is doubt about the effectiveness of the security of our nuclear power plants in many quarters. In the aftermath of 9/11, President Bush and other top government officials have said repeatedly that more terrorist attacks are likely. In his 2002 State of the Union Address, President Bush said that diagrams of nuclear power plants had been discovered in Al-Qaeda hideouts in Afghanistan.[4]

In April, the White House homeland security budget report, entitled "Securing the Homeland, Strengthening the Nation" identified nuclear facilities as among "the nation's highest risk targets" and among "the most vulnerable potential targets" of terrorists.[5]

Furthermore, during a briefing of the *New York Times* editorial board, Homeland Security Director Tom Ridge was asked, "given all the things he had to worry about – hijacked airlines, anthrax in the mail, smallpox, germs in crop-dusters – what did he worry about most? He cupped his hands prayerfully and pressed his fingertips to his lips. 'Nuclear,' he said simply."[6]

But it's not just political leaders and national security officials who are concerned about attacks on nuclear plants. The public is also concerned. Polls taken by news organizations show

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[2] Nuclear Regulatory Commission (NRC), www.nrc.gov, Downloaded August 27, 2002.

[3] Nuclear Regulatory Commission Briefing on Safeguards Performance Assessment Public Meeting Transcript, May 5, 1999 http://www.nrc.gov/reading-rm/doc-collections/commission/tr/1999/19990505a.html, p. 47, Downloaded August 29, 2002.

[4] http://www.whitehouse.gov/news/releases/2002/01/20020129-11.html, Downloaded August 27, 2002.

[5] http://www.whitehouse.gov/homeland/homeland_security_book.pdf, Downloaded August 27, 2002.

[6] "Nuclear Nightmares," *New York Times Magazine*, May 26, 2002.

that the majority of Americans believe it is likely that terrorists will attack a nuclear power plant:

- In a Fox News poll of 900 registered voters nationwide in April 2002, 65% said they thought that security at U.S. nuclear power plants needs to be tightened.[7]

- In May 2002, *Time* and CNN asked 1,007 Americans how likely they thought it was that terrorists would attack a nuclear power plant in the next 12 months – 76% said they thought it was likely or somewhat likely.[8]

These concerns are not without basis.

More than half of the nation's nuclear power reactors are near metropolitan areas, including Indian Point near New York City; Salem and Hope Creek near Philadelphia; Limerick, also near Philadelphia; Seabrook and Pilgrim, both near Boston; and Waterford near New Orleans.[9]

While there has never been a successful terrorist attack on a nuclear power plant, there have been threats or attempts to penetrate or sabotage nuclear reactor sites reported in the United States.[10] Officials have identified several attempts to penetrate security at nuclear plants since 1978. Most significantly, in the mid-1980s, three power lines leading to the Palo Verde plant in Arizona were sabotaged, and in 1989 four people were charged with conspiring to disable three Southwest nuclear plants.[11]

According to a Princeton University study, the 1986 Chernobyl accident significantly contaminated over 140,000 square kilometers in Belarus, Russia and Ukraine; induced perhaps 10,000 child cases of thyroid cancer; resulted in the deaths of an uncertain number of plant and emergency workers; and otherwise affected the lives of over 7 million people.[12]

The NRC projected in 1981 that in a worst case accident at the San Onofre plant near San Clemente, California, as many as 130,000 deaths could result from an accident where the redundant safety mechanisms fail, and radioactivity reaches the environment in sufficient amounts to threaten

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[7]The margin of error was +/- 3%. http://www.foxnews.com/story/0,2933,50991,00.html Downloaded August 27, 2002.

[8] 39% said they thought it was very likely, while 37% said they thought it was somewhat likely. The margin of error was +/- 3.1%. Harris/*Time*/*Cable News Network* Poll, By Harris Interactive, For *Time/Cable News Network*, National Adult Sample of 1007, Survey Date: 22-24 May 2002, Data Provided by iPoll at The Roper Center at University of Connecticut.

[9] http://www.greenpeaceusa.org/nuclear/locator.htm, Downloaded August 27, 2002.

[10] Letter to Glenn Tracy, NRC Office of Nuclear Reactor Regulation from David Lochbaum, Union of Concerned Scientists, November 29,2001. http://www.ucsusa.org/index.html, Downloaded August 29, 2002.

[11] "A Nuclear Nightmare," *U.S. News & World Report*, September 17, 2001.

[12] "Preventing Nuclear Power Plant Terrorism: A Case Study of the Salem Power Plants," Princeton University's Woodrow Wilson School, May 14, 2002, p. 19.

the public, as might be caused by successful sabotage.[13]

NRC officials said in early September 2002 that the methodology used to project fatalities has changed since the 1981 study and that the projection is no longer valid. The officials said the NRC now estimates, based on a classified study, that in the most severe accident at a nuclear power plant, a handful to several dozen people would die soon after the accident and several hundred to several thousand people would develop health problems, such as cancer, over their lifetimes.

Currently, NRC commissioners, utility executives and nuclear industry lobbyists have all tried to alleviate the public's concerns. Richard Meserve, Chairman of the NRC, testified before Congress that the nation's nuclear plants have robust security, stating, "... NRC's current programs continue to provide a very high level of security ... . We are comfortable with the security at our nuclear power plants."[14]

One official with the nuclear industry association Nuclear Energy Institute (NEI) even went so far as to argue that "the plants are overly defended at a level that is not at all commensurate with risk."[15] Since then, NEI has run advertisements with pictures of well-armed and intimidating individuals and splashed with blazing headlines such as "Vigilant" and "More than Strong Fences – It's about the paramilitary security professionals who protect what's behind the fences."(Appendix S)

Despite the assurances from Chairman Meserve and the nuclear industry that nuclear security is adequate, David N. Orrik, the NRC security official who conducts mock terrorist attack tests at nuclear power plants, testified to the contrary. He testified before Congress on April 11, 2002 that the NRC found "a significant weakness" in armed response during 37 out of 81 mock attacks and the mock "attackers" were able to take actions "which would lead to core damage and in many cases, to a probable radioactive release." In other words, the guard forces failed to protect the plants during these mock attack tests 46% of the time. [16]

As further evidence that post-9/11 security is not as "vigilant" as suggested by the nuclear industry or its regulators at the NRC, mock "terrorists" have told POGO they were able to enter a plant disguised as a work crew, "destroy" the target sets,[17] and leave the plant completely undetected. In another example, mock "terrorists" created false identification badges and were able to enter the control room of a nuclear plant and exit unimpeded.

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[13] NRC Supplement to Draft Environmental Statement Related to the Operation of San Onofre Nuclear Generating Station, Units 2 & 3, NUREG-0490, January 1981, Figure 7.1.4-4, "Probability Distribution of Acute Fatalities." It estimates 130,000 deaths in the event of a worst-case accident.

[14] http://www.senate.gov/~epw/Meserve_060502.htm, Downloaded August 27, 2002.

[15] "A Nuclear Nightmare," *U.S. News & World Report*, September 17, 2001, p. 44.

[16] http://energycommerce.house.gov/107/hearings/04112002Hearing532/Orrik908.htm Downloaded August 27, 2002.

[17] According to the NRC, "A target set consists of interrelated equipment or a single component that if disabled or destroyed could prevent the reactor from being maintained in a safe condition."

Some Members of Congress have become so frustrated with the NRC's resistance to seriously upgrading security that they are trying to legislate improvements in security.

This POGO report examines what has happened since 9/11, and the roles and problems at the nexis where the important players in nuclear power plant security meet: the guards, the utilities running the plants, local law enforcement and other outside responders to an attack, and NRC's federal oversight.

POGO found that the security forces at the nation's nuclear power plants, with a few exceptions, believe they are under-manned, under-trained, under-equipped, underpaid and unsure about the rules of using deadly force.

Increased Security Since September 11, 2001?

The NRC has done little to effectively improve security at nuclear power plants since 9/11. Most significantly, the NRC has not toughened the Design Basis Threat (DBT) security regulations, which specify the number of outside attackers and inside co-conspirators that nuclear facilities must be prepared to defeat.[18] The current DBT reportedly only requires nuclear plants to be prepared for an attack by three terrorists – hardly realistic given the coordinated attack by 19 terrorists on 9/11.[19]

According to NRC sources, the NRC's Threat Assessment Team recommended improvements to the currently inadequate DBT after 9/11. Unfortunately, that recommendation has languished at the Commissioner level and Chairman Meserve of the NRC testified in June 2002, that the Commission could not commit to a date for toughening the DBT.

Indecisiveness over increasing the DBT will further exacerbate the delay in implementing heightened security. Because it takes time to hire and train guards, reconfigure the physical layout of parts of the plant, and purchase equipment that meets the requirements of a new DBT, it will be at least two years *after* 9/11 before necessary upgrades are likely to be implemented.

Instead of upgrading the DBT, the NRC issued an order on February 25, 2002, to its utilities to make a temporary, incremental upgrade to their defensive posture. [20] These upgrades included minimally increasing the guard force, requiring the guards to actually carry their primary weapons while on patrol, and moving truck bomb barriers farther from reactor target sets. Plants were also ordered to address vehicle access control problems, for instance by requiring guards to escort chemical trucks in the security area, as well as to address the effectiveness of intrusion detection systems such as alarms on fences and doors. These improvements were required to be implemented by the end of August 2002 and were described by an NRC Commissioner as an "implicit" increase in the DBT.

On August 20, 2002, 11 months after 9/11, the NRC announced a new Homeland Security Advisory System. This new system, according to this NRC Commissioner, sent a "strong hint" to the plants that the NRC would not allow them to return their pre-9/11 security postures. It does not however, spell out exactly what the new expectations will be. (Appendix R)

One example of changes in security that does not actually improve security is the utility companies' dependence on overtime. According to the majority of the guards interviewed by POGO, rather than dramatically increasing the number of guards, their plants are heavily relying on

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[18] The Code of Federal Regulations, 10 CFR 73.1. The DBT also dictates the weapons attackers might use and states that the plants should assume the terrorists would have the help of a plant employee known as a passive "insider" who would provide information, or even an active "insider" who would "facilitate entrance and exit, disable alarms and communications, participate in violent attack."

[19]The number of outside attackers has been reported in *U.S. News & World Report*, September 17, 2001; *Chicago Tribune*, July 12, 2002; *The Boston Globe*, May 14, 2002; *Bulletin of the Atomic Scientists*, January 1, 2002; "Nuclear Nightmares," *New York Times Magazine*, May 26, 2002.

[20] http://www.nrc.gov/reading-rm/doc-collections/news/2002/02-025.html, Downloaded August 27, 2002.

increased overtime of the existing guard force – with 12-hour shifts, six days a week being common. These guards raised serious concerns about the inability to remain fully alert under these circumstances.

Following 9/11, National Guard units were also stationed outside a number of nuclear power plants to patrol the perimeter. Security experts advise that while this may be a deterrent, it is not an effective tactic if there were a real attack on the plant. As the Special Forces describe the role of perimeter defense, the plant guards are alerted that an attack is underway when the National Guardsmen on the perimeter are killed – the proverbial canary in a coal mine. It was later discovered that at least some of the National Guard units were patrolling with unloaded weapons.[21]

Yet another example of insufficiently increased security is that to protect against larger truck bombs, the utilities were ordered to move the barriers back to 700 feet from the hardened target buildings. However, some experts believe this move is inadequate. The analysis used to arrive at this distance assumed the use of a smaller bomb than has been used by terrorists against a number of U.S. targets. The attacks against the World Trade Center (in 1993), the Murrah Building in Oklahoma City, and U.S. embassies and barracks overseas used larger trucks to deliver the bombs than were accounted for in the analysis. An NRC official has suggested that the move to 700 feet was derived more from a concern about the loss of convenient parking spaces, rather than from security considerations.

Because the NRC only requires guards at nuclear power plants to be able to delay, observe and report an attack, security guards are not expected to be able to defeat a terrorist attack without reinforcement from outside responders. The NRC, however, has only just begun tabletop testing the timelines for these responder teams to arrive at the plant. Initial estimates are one- to two- hours after the attack, even though performance tests have shown successful terrorist attacks to take between three and ten minutes.

In response to 9/11, the NRC also established the Office of Nuclear Security and Incident Response on April 7, 2002. However, only one of the five senior managers of this office has any security experience. The others are safety and emergency response experts. This is not much of a step forward for security.

Despite the critical need for increased security since 9/11, the NRC has not conducted force-on-force performance tests to determine whether or not the recent minimal upgrades in security have improved the performance of the guard force in handling even the current, inadequate DBT. The NRC claims this is due to its current high-alert status. However, both the Department of Defense and the Department of Energy, which are also at high-alert status, have continued to test the performance of security over the past year.

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[21] *The Associated Press* reported that Pennsylvania House Minority Whip Mike Veon told a Pennsylvania newspaper that National Guard troops had been patrolling the state's five nuclear power plants with unloaded weapons. "Penn. Lawmaker: Guard Guns are Empty," *Washington Post*, May 31, 2002.

The Guards: Under-manned, Under-equipped, Under-trained, Underpaid and Unsure about the Rules

POGO has interviewed security guards protecting 23%, more than one in five, of the operating and one decommissioning nuclear power reactors, as well as a National Guardsman protecting the perimeter of a plant. Many of the guards were willing to give POGO their statements to be attached to this report as long as neither their identity nor their specific plant were identified. They did not want to reveal ongoing vulnerabilities at those plants, nor they did want to jeopardize their jobs.

The utilities running the nuclear power plants are businesses primarily focused on the bottom line of profitability. Security expenditures are drains on those profits, and as a result seem to take a back seat. Out of the 13 plants POGO investigated, only three had guards who were confident they could defeat a terrorist attack. One guard stated, in response to questions about the quality of security at his plant, "The NEI is fooling the public, which is outrageous."

On the one hand, it appears that the plants with the best security have a common thread – security improves when utilities hire security managers with military backgrounds in physical security, and support them with an adequate number of guards, training, and weaponry.

On the other hand, several guards told POGO that in the face of a real terrorist attack, they believe that being outnumbered, out-trained and outgunned, along with the low morale exacerbated by poor compensation, would result in a substantial number of guards using their weapons to protect themselves while leaving the plant. Many of the guards are simply not confident that they could protect their plant from a terrorist attack, and therefore believe there would be no point in trying. These are their concerns. POGO has no way to judge the extent of this problem, and is in no way questioning the courage and dedication of these guards to protect each other and the public. (Appendix A, B, C, F, G, K, L, M, N, and O)

POGO has been advised by military Special Forces trained as adversarial forces that any terrorists who attack a plant would most likely be well-trained, well-equipped, highly-motivated and suicidal. This was certainly borne out on 9/11. In a terrorist attack, the initial strike would likely be extraordinarily violent, fast and with a significant level of human carnage.

Unlike other nuclear power plant employees, such as nuclear operators, security guards have no association or single union voice to relay their concerns directly to the NRC. Overwhelmingly, the guards interviewed tell POGO they are:

- **Under-manned:** Guard forces are generally reduced significantly after passing an NRC mock terrorist attack. Since 9/11, utilities have been ordered to increase the size of their guard force, but many have relied heavily on requiring the existing guards to put in extraordinary overtime.

- **Under-equipped:** Many of the guards do not believe they are equipped with

adequate firearms and other weaponry. Many are concerned they would simply be out-gunned in a terrorist attack.

- **Under-trained:** The current guards and new recruits believe they are not adequately trained either in tactics or in the use of firearms to combat a terrorist attack.

- **Underpaid:** Security guards are the lowest compensated employees at a number of nuclear power plants – even when compared to custodians or janitors who are often not only paid more, but have better benefits. This has led to high turnover and seriously low morale at most of the plants POGO investigated.

- **Unsure:** Nearly all of the guards interviewed are concerned about the confusion surrounding the use of deadly force. They are currently restricted from using their weapon unless an intruder is wielding a weapon or threatening an individual. Therefore, if a terrorist jumps the fence and heads straight for the spent fuel pool or reactor, the guard can only observe and report the event.

Under-manned

The NRC has only required that the plants have between five and ten guards to protect an entire nuclear plant. According to the Code of Federal Regulations:

> "The total number of guards, and armed, trained personnel immediately available at the facility to fulfill these response requirements ["for responding to threats, thefts, and radiological sabotage"] shall nominally be ten (10), unless specifically required otherwise on a case by case basis by the Commission; however, this number may not be reduced to less than five (5) guards."[22]

Security experts have told POGO that five guards would be clearly insufficient to win a battle with terrorists.

A number of the guards interviewed also believed they would have serious trouble defeating even the current DBT of three outside attackers, no active insider, and no multiple entries or diversions. (Appendix B, F, H, I, J, and K)

For example, the security posture at nuclear power plants is so fragile that many guard forces have "failed" mock attacks because a single guard made a mistake. Nuclear plants are designed to be protected from a single failure causing core damage – but security plans are not. The non-profit Union of Concerned Scientists and Nuclear Control Institute have advocated that security plans should be robust enough that a single mistake by a guard would not allow the attackers to win.[23]

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[22] Code of Federal Regulations, 10CFR 73.55.

[23] www.ucsusa.org and www.nci.org.

According to both guards and NRC officials interviewed by POGO, the number of guards at most plants was reduced by as much as 30% after successfully completing NRC mock terrorist attack tests in the mid- to late-1990s. After 9/11, some of the power plants began to increase the size of their guard forces. Some of the guards advise they are still not up to the levels at which they passed the tests. (Appendix E, H, I, J, K, and M)

John McGaha, Executive Vice President and Chief Operating Officer for Entergy, one of the largest operators of nuclear power plants, acknowledged:

> "I mean I'll admit that plants have staffed up and energized themselves and done some things to get ready for [the mock terrorist attack tests], especially in the early days, and after the [test] was over, they backed off on some of those things."[24]

While a few guards said their plants have had a dramatic increase in the guard force since 9/11 – one has tripled the number of guards – most of the guards interviewed believe that they are still below levels that are adequate to defeat a real terrorist attack. (Appendix A, B, F, H, I, J, K and L)

To exploit existing resources, many utilities have relied heavily on requiring the existing guards to put in extraordinary overtime – 12 hour shifts, six days a week. A number of guards have raised serious questions about their ability to remain alert under these conditions, as these hours are both mentally and physically exhausting. One guard told POGO he had been required to work 19 hours straight. Two other guards were fired because they refused to work a sixth consecutive day of 12-hour shifts. One of these guards said he was concerned that "he was too fatigued and would be unfit for duty for the mandated overtime." He filed a complaint with the Department of Labor (DOL) who ruled in his favor. The employer, The Wackenhut Corporation, settled with him. During its investigation, the DOL learned, "The NRC considers the 72 hour rule to be reasonable and fear that if an SO [Security Officer] is permitted to refuse to work based on fatigue it would create turmoil in the industry." (Appendix A, B, C, G, Addendum H, K, L, M, N, O, and W)

Although the NRC is currently working on a "Fatigue Rule" to restrict the number of hours nuclear operators can work, these restrictions are not being considered for guards.

Because the NRC order to increase the number of guards on duty is temporary, and is only in force as long as there is a heightened threat environment, nuclear plants are not likely to make many permanent hires until they are required to do so by the NRC. It is important to note that until a credible DBT deciding the number of adversaries and their capabilities in weaponry, tools, and tactics is issued by the NRC, the utilities are in a difficult quandary as to how to adequately size their guard forces.[25]

The adequate number of guards cannot simply be dictated generically. All of the plants have different physical configurations, vulnerabilities, and timelines to intercept the attackers with

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[24] http://www.nrc.gov/reading-rm/doc-collections/commission/tr/1999/19990505a.html, p. 102, Downloaded August 29, 2002.

[25] http://www.nrc.gov/reading-rm/doc-collections/news/2002/02-025.html, Downloaded August 27, 2002.

adequate force. Rather than determining what tactics, size of guard forces, and weaponry is adequate in a cookie-cutter manner, the NRC should allow security experts to determine these factors by performing vulnerability assessments, JTS computer modeling, and force-on-force mock terrorist performance tests for each specific site.

In addition to inadequate numbers, there is also a significant problem with high turnover. POGO has been told that turnover in the guard force at some plants is as high as 70-100% over the life of a labor contract – about 3½ years. For example, at one plant 90% of the guard force has only one year experience. (Appendix A, C, K, L, M and P)

Under-equipped

In 2002, Nuclear Energy Institute (NEI), the nuclear industry's trade group, placed advertisements in the *Washington Post* and other newspapers designed to lead Congress and the public to believe that the guards at nuclear power plants are well-equipped. These advertisements depicted security guards wearing bulletproof vests and carrying semi-automatic weapons. Contrary to those images, according to NRC officials and guards themselves, most of the guards did not carry these weapons while on patrol or any other time. At the time the advertisements were placed, only about two-thirds of all nuclear power plants even provided access to the semi-automatic weapons shown in the pictures. According to NRC officials, until the Summer of 2002, one-third of the nuclear plant guard forces around the country were equipped only with shotguns and revolvers.

The power and range of the weapons provided to many of the guards are vastly inferior to the weapons known to be used by terrorists. This is in part caused by some state laws that restrict the types of weapons and ammunition carried by private security forces. Several of the guards explained that they will be simply out-gunned if a terrorist attack takes place. Not only do they believe the number of outside attackers in the DBT is unrealistic, but they also believe their weaponry would never match up to that of a real terrorist. One guard with extensive military experience said, "a guard can be an excellent shot, but if he's out-gunned, he dies." Shotguns, pistols and sometimes semi-automatic AR-15s cannot compete with the automatic weapons, even the NRC expects terrorists to use let alone the sniper rifles, grenade launchers, or rocket-propelled grenades with which attacking terrorists, in all likelihood, will be equipped. (Appendix B, E, F, G, H, I, J, L, M, N, O, and P)

Some guards with military backgrounds are particularly concerned that the terrorists with the use of hand grenades and other explosives inside the target buildings, would take out multiple guards. (Appendix E and F)

Other guards said they have traditionally been equipped only with 9-millimeter pistols and only had access to shotguns and bulletproof vests that were locked up at a central location, sometimes more than a football field's distance away. In case of a real attack, the guards would have to get to that location, unlock the cabinet, retrieve their shotguns and protective gear, and return to their post. By that time, terrorists could have achieved their goals and may have caused catastrophic damage. Unbelievably, it took the February 2002 order from the NRC before facilities finally began requiring guards to carry their "primary weapon" (i.e. shotgun or rifle) for the first time. (Appendix A, H, I, J, K, N, O, and P)

One National Guard team leader stationed at a nuclear power plant told POGO that he had major concerns about the security at that plant, and the ability of guards to defend themselves. He said he could see virtually every security guard post from his vantage point outside the perimeter fence. Although these posts are bullet resistant, he said that with a 50-caliber sniper rifle with armor-piercing incendiary (API) rounds, he could take out every guard post without ever having to cross the fence line. (Appendix Q)

Under-trained

Nuclear industry executives have repeatedly claimed that guards are given 270 hours of training before being posted; that they receive 90 hours per year to requalify with their weapons; and that they receive 30 hours per year in antiterrorist tactical exercises. They have claimed that guards are trained to resist "a determined violent external assault, attack by stealth or deceptive actions, by several persons," and to assume that attackers could have military skills, inside assistance, hand-held automatic weapons, and a four-wheel drive vehicle.[26] None of these claims appear to be true.

When asked to explain industry's claims that guards receive 270 hours of training before beginning their job, one guard joked, "Maybe if you add the training hours of all the guards together." (Appendix F)

According to two former Seabrook nuclear power plant guards who were hired post-9/11, they were only given four days of tactical training and three days of weapons training before being posted. Neither they, nor any of the other 14 recruits in their training class, had military or law enforcement experience. The majority of those recruits had never even fired a weapon before. Yet during their training they were limited to firing 96 rounds with their handguns and fewer rounds with their shotguns, and were told they "would not be firing our service weapons again until the annual qualifications." The guards said they informed the trainers more training was necessary, but were told that if they wanted more practice with the weapons, it would have to be on their own time and at their own expense. (Appendix N and O)

Most of the guards interviewed train with their weapons only once during their annual weapons qualification, and a few can practice two to three more times each year on company time if they so choose. Given the extraordinary overtime most guards are working, few are taking these opportunities. Generally, the total hours firing with their weapons is approximately two to three hours per year – hardly the 90 hours advertised by the nuclear industry. (Appendix B, C, D, F, G, H, I, J, K, L, M, N, O, and P)

Relying on requalification with weapons only once a year is not at all commensurate with the recommendation of the Firearms Division of the Federal Law Enforcement Training Center. This Center trains officers from more than more than 70 federal agencies and provides training services to police departments nationwide. They recommend that law enforcement agencies require their officers to qualify with their weapons on a quarterly basis.

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[26] "The Case Against Federalizing Plant Security," American Nuclear Society's *Nuclear News* February 2002, p. 24, and "Nuclear Energy: Optimism about the Future," *Nuclear News*, August 2002, p. 39.

Most guards interviewed at the nuclear power plants said they have had no training or practice in shooting at a moving target. Just recently, some guards have begun shooting at a silhouette of a person being dragged across the target range. None of the guards indicated being trained shooting on the run. (Appendix G, H, I, and J)

Guards were also inadequately trained in the use of new night vision scopes for their M-16 rifles. According to one guard who has had extensive military experience with M-16s, they received no training on the new more complicated scope. In their annual qualification, the guards were only allowed ten practice rounds before qualifying with the new equipment. He said that, for the first time, even his proficiency dropped significantly because of the new scopes. He claims he is not at all confident he will hit his target if he is using the new site during an attack. (Appendix K)

Generally, the only time the utilities require more training is just before the guard forces will be subjected to mock force-on-force tests by the NRC – which has been every eight years. (Appendix C, E, G, H, I, and J)

Underpaid

(Note: To avoid exposing the identity of POGO's sources, POGO obtained the pay scales of security guards from plants that do not correlate with the plants whose guards were interviewed for other portions of this report.)

Adequate compensation directly affects the morale and motivation of the guard forces at the nation's nuclear power plants. The Nuclear Energy Institute claims in its newspaper ads that the guards are "well-compensated professionals." However, POGO found otherwise. At least six of the plants that POGO investigated have guards who are paid between *$1-$4 per hour less* than the custodians or janitors at those plants. (Appendix V)

For example, at the Salem and Hope Creek power plant, operated by PSEG, the security guards are paid $1 per hour less than custodians and $8 per hour less than the on-site fire department. When confronted with this data, PSEG's President responded, "In summary, it should be noted that security officers are free to pursue career advancement opportunities and alternative occupations, whether that is within security, performing custodial work, or becoming a licensed operator." (Appendix T)

It appears the compensation situation was exacerbated during the 1990s when the utilities decided to subcontract their guard forces. Prior to that time, the guards worked directly for the utilities, and were on the pay and benefits scales of the utilities. The utilities then learned they could save money by contracting out. The companies that provide security at most of the plants are Burns International Service Corporation, Pinkerton Service Corporation, and The Wackenhut Corporation. As a result of subcontracting, the guards' compensation was reduced across the board. This is the main reason guards regularly make less than the custodians, who are still on the utility payroll.

The guards also often earn less than many workers who face substantially less physical risk, such as construction workers, postal clerks, funeral attendants, utility meter readers, and aerobic

instructors. In one area, the guards earn about the same as recreation workers and manicurists.[27] (Appendix X)

POGO obtained the salaries that guards are paid at five nuclear plants in four states and compared the highest hourly wages the guards receive to the average hourly pay for other jobs in their area. The nuclear security guards pay usually does not increase after three years, except sometimes for cost-of-living increases. (Appendix V)

In its salary survey, POGO found that the highest paid security guards earn significantly less annually than police and sheriff's patrol officers averaged near the plants. For example, at three plants, the highest paid guards at Limerick, near Philadelphia, and Monticello and Prairie Island near Minneapolis, earned nearly $11,000 less annually than police officers in their community. (Appendix X)

In addition to being underpaid the guards also do not receive adequate health insurance benefits. In the United States, the average cost to an employee for family health care coverage is $150 per month.[28] However, for family health care coverage, nuclear security guards:

- At Salem and Hope Creek who live in Delaware pay $478.60 each month[29];
- At Browns Ferry pay $290.68 each month; and
- At Monticello pay $330 per month.

Unsure About Deadly Force

Currently, guards at nuclear power plants are generally prohibited from using deadly force unless an intruder wields a weapon, or they feel their life or the life of someone else is in danger, in accordance with state law. In other words, if a terrorist jumped over a fence with a backpack and ran toward the reactor building, a guard could only observe and report him.

Of course, there are important and legitimate reasons to restrict the guards' ability to use deadly force, given the possibility that the intruder is not in fact a terrorist. The problem is that currently, the guard forces feel they are without adequate guidance as to how to determine and prevent a genuine threat.

Nearly all of the guards interviewed by POGO raised concerns about this problem. The NRC has unsuccessfully tried to convince Congress to resolve this problem for years. In a 1999 NRC meeting, for example, NRC official Richard Rosano said that "the NRC interprets its regulations to mean that guards can use deadly force in protection of plant, property or other systems," but he added that "is not consistent with state laws to the contrary, and there is currently no federal

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[27] In the Knoxville, Tennesee area.

[28] "Trends and Indicators in the Changing Health Care Marketplace," Kaiser Family Foundation. http://www.kff.org/content/2002/3161/marketplace2002_finalc.pdf, Downloaded August 30, 2002.

[29] Guards who live in New Jersey pay $317.10, Maryland $178.60, and in Pennsylvania $229.60.

authority on the books to grant employees of Part 50 utilities to use deadly force" to protect plant systems.[30] (Appendix A, B, C, D, E, G, and L)

"The states traditionally allow the use of deadly force only to protect persons, not property, and so, absent interdiction so that you put yourself in the path of the bullets, guards are not allowed to use deadly force to protect the plant," Rosano said.[31]

POGO has been told of an instance when an inspector with the Nuclear Regulatory Commission observed a guard follow a mock terrorist during a force-on-force drill. While the mock terrorist "destroyed" critical target sets in the reactor complex which would have led to a meltdown, the guard did not stop him. When the guard was asked why he was not doing anything to stop him, he explained that he did not have the authority to shoot an intruder who was only destroying property.

One guard summed up the problem stating, "If you pull your trigger, you're on your own, and you'll need a good lawyer." (Appendix E)

Another guard said that at his plant there was a saying, "I'd rather be judged by twelve, than carried by six," meaning they'd shoot first and go before a jury, rather than be carried in a coffin by six pallbearers. This suggests an unreasonable tension exists between doing their job and obeying the law. (Appendix C)

Outside Responders: What Help Can They Offer?

In the event of a terrorist attack, the NRC does not require a facility to be able to defeat the attack without help from the outside – SWAT units from the local sheriff, State Police or the FBI. In fact, the NRC requires only that the security guards should be capable of:

> (1)Preventing any successful theft or act of sabotage by one or two armed individuals or a group of unarmed people.
> (2) Delaying the attack of an armed group up to squad size sufficiently long to allow notification of and response by law enforcement authorities so that the attempted theft or sabotage is thwarted or stolen material is promptly recovered.
> (3) Defending itself in the event of a well-planned attack, executed in a disciplined and organized manner sufficiently well to communicate with law enforcement authorities to advise them of the attack and its scope and furnish information to be used as a basis for countermeasures and a properly escalated response by local, State or Federal counterforces either to prevent removal of the material or recover it or to initiate appropriate post sabotage action.[32]

[30] http://www.nrc.gov/reading-rm/doc-collections/commission/tr/1999/19990505a.html, p. 52 , Downloaded August 29, 2002.

[31] Ibid.

[32] http://www.nrc.gov/reading-rm/doc-collections/re-guides/protection/active/, NRC Regulatory Guide 5.43 - Plant Security Force Duties, Downloaded September 9, 2002.

The utilities confirm that their role is simply to interrupt and delay the attackers until outside help arrives. "Delay is the name of the game," said Wayne A. Trump, manager of security at Peach Bottom nuclear plant in Pennsylvania. "We fall back, protect and call in outside help."[33]

Don Mothena, manager of plant services for Florida Power & Light, also explained, "Our job is to provide sufficient delay, so that we can get local law enforcement support to aid us. This is not meant to be a long-term battle. It's meant to be something where you recognize that you have a problem, you yell quickly, you yell loud, and you get additional resources to help you perform the important task of protecting the power plant."[34]

The NRC is only just recognizing that there is a chasm between how long plant security can hold off an attack and when outside responders will arrive. "Where are the lines?" asks Roy P. Zimmerman, director of the NRC's new Office of Nuclear Security and Incident Response. "Where is it that the utility has responsibility, and where is...the responsibility for various levels of government?"[35]

It is unrealistic to believe that the nuclear plants can depend on outside help to defeat a terrorist attack. The consensus among those security experts who POGO consulted is that a suicidal attack on a nuclear plant aimed at the reactor or spent fuel pools would be over, one way or the other, in 3-10 minutes. In fact, people familiar with NRC OSRE's tell POGO the mock attacks are usually lost in three minutes. One guard said that his own utility security manager admitted that if something happened, "they (the terrorists) would come trained to the hilt, and the plant would be wiped out in 20 minutes." (Appendix Addendum H)

Some guards believe, and top NRC officials acknowledged to POGO, that tabletop exercises indicate it would take one-two hours for outside responders to arrive on the scene prepared to try to take back the plant from terrorists. These tabletop exercises evaluating response times only began in July 2002. (Appendix D, L and P)

The delay results from the actions that must take place if an emergency call were made from a nuclear power plant that was under attack and in need of backup to outside responders. These actions are:

- Assemble SWAT unit;
- Transport SWAT unit to the site;
- Conduct security briefing to inform the SWAT unit about where the terrorists are located and how they are armed; and
- Coordinate the actions of the SWAT unit with those of the guard force.

[33] "U.S. Nuclear Plants Face Security Gaps Since Sept. 11 Raids," *Wall Street Journal*, July 3, 2002, p. 1.

[34] "Nuclear Energy: Optimism about the Future," American Nuclear Society, *Nuclear News*, August 2002, p. 40.

[35] *Wall Street Journal,* July 3, 2002.

The Department of Energy (DOE) had experience with this process at Lawrence Livermore National Labs in California when, in the mid-1990s, it disbanded its in-house SWAT team for budgetary reasons and was dependant on the SWAT capabilities of the Alameda County Sheriff's Department. When DOE performance tested this arrangement in a force-on-force test, they found it took the Sheriff's SWAT unit two hours to arrive at Livermore – long after the attack was over. Livermore reestablished its own SWAT team.

A number of guards and government and private nuclear power security experts interviewed by POGO indicated that the utilities have never performance tested the length of time it would actually take for an outside responder SWAT team to arrive. While the NRC has recently begun a pilot program to test these timelines, it is only performing tabletop exercises rather than actual drills. The few live exercises that have been sponsored by the Federal Emergency Management Agency and the NRC have focused on a nuclear accident, the response to which is not at all comparable to the response which is required by a terrorist attack. These live exercises, which focus on evacuation procedures and medical and HAZMAT technicians as outside responders, can tell us little about how long it would take SWAT units to arrive and how they would interact with guard forces in the event of an attack.

Some guards indicated they believe a few State Police or local sheriffs' deputies could respond in 10-20 minutes. However, these responders do not constitute a combat force, do not carry automatic weapons, and are not familiar with plant layout or the target sets to be protected. (Appendix B, C, D, E, F, K and L)

Any number of issues arise when an outside SWAT unit actually arrives at the plant:

- Is the guard force familiar with the group arriving? The guards may not allow them onto the site, thinking they are a second wave of terrorists.
- Are they familiar with the layout of the plant?
- Are they familiar with the target sets that must be protected?
- How are they going to communicate and coordinate their actions with the guard force? Have they predetermined radios, frequency, and encryption?

NRC officials currently accept the two-hour delay in response time because they believe it would take at least an hour or two after an attack before irreversible core meltdown would occur. Nuclear operators are assumed to have sufficient time to manipulate the controls to prevent significant core damage. The NRC has performed no analysis, however, to support this assumption. An NRC Commissioner explained to POGO that this assertion is based on a conversation with a Japanese nuclear regulator. NRC officials admit, however, that if the terrorists or an "active insider" disables the reactor controls and their back-up, there would be nothing outsider responders could do.

The best real-life example of the chaos that ensues during a security emergency was in 1993, when a deranged individual broke into the protected area at Three Mile Island and for four hours could not be found. During that incident, according to the NRC's own analysis of the event:

"while the intruder was at large . . . (P)ersonnel safety considerations also prompted a decision not to staff the normal designated in-plant technical support center or the operations support center which are located in the control tower. . . . The licensee focused on re-establishing the security of the facility and eliminating the intruder, thus obscuring the broader emergency response measures required for potential radiological sabotage."[36]

The operators abandoned the prescribed procedures during the event, even though there was no direct threat to them – no gun shots or grenade explosions. In other words, the nuclear operators who were supposed to prevent core damage by taking corrective action had the human reaction of placing their personal safety over their emergency duties of preventing radiological sabotage. The Nuclear Control Institute makes the point, ". . . there is no evidence that operators have the necessary training to cope with the complex set of events that could occur during an attack. Destruction of an entire target set typically corresponds to a 'beyond-design basis' accident, which is likely to be beyond the effective control of operators or mitigation systems."[37] This event suggests the NRC should reconsider its belief that the nuclear operators will perform heroically and risk personal safety while under attack for two hours before outside responders can arrive.

Federal Government Oversight: Dumbed-Down NRC Mock Attack Tests and Design Basis Threat

The Design Basis Threat (DBT) specifies the number of outside attackers and inside co-conspirators that nuclear facilities must be able to defeat. According to the Code of Federal Regulations, the DBT mandates that the guard forces be capable of fending off several attackers. The Code is not specific and does not define "several," but a number of publications have reported that the NRC is only protecting against three terrorists who would attempt to penetrate a plant.[38] This number is highly unrealistic in light of the 9/11 attack. The DBT also specifies the weapons attackers might use and states that the plants should assume they would have the help of an informed accomplice known as a passive "insider" who would provide information, or even an active "insider" who would "facilitate entrance and exit, disable alarms and communications, participate in violent attack."[39]

While the NRC has become more concerned about the active and passive insider threat, the utilities are downplaying it, claiming that background checks and other personnel reliability programs negate the possibility of an insider. Notably, however, virtually all of America's known spies have been trusted insiders with the highest security clearances in the government – most

[36] http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1993/in93094.html, Downloaded September 9, 2002.

[37] Dr. Edwin S. Lyman and Paul Leventhal, "Radiological Sabotage at Nuclear Power Plants: A Moving Target Set," www.nci.org/e/el-inmm2000.htm, Downloaded September 5, 2002.

[38] *U.S. News & World Report*, September 17, 2001; *Chicago Tribune*, July 12, 2002; *The Boston Globe*, May 14, 2002; *Bulletin of the Atomic Scientists*, January 1, 2002; "Nuclear Nightmares," *New York Times Magazine*, May 26, 2002.

[39] Code of Federal Regulations, 10CFR73.1.

recently Robert Hansen and Aldrich Ames. Therefore, background checks and personnel reliability programs have *not* solved the insider problem. To further challenge industry assurances that an "insider" is implausible, Representative Edward Markey (D-MA) revealed that "the NRC does not know how many foreign nationals are employed at the nuclear reactors, and does not require adequate background checks of nuclear reactor employees that would determine whether an employee was a member of a terrorist organization."[40]

At the beginning of the OSRE test, the NRC performs board games or paper simulations called "tabletop" exercises to evaluate whether or not the tactical response of the security force can protect the plant. Typically, a tabletop exercise is a good first step in determining the effectiveness of the size and tactics of the guard force. However, the NRC should require (but doesn't) the use of Joint Tactical Simulation (JTS) computer modeling. JTS injects more realism into tabletop exercises and is used extensively by the military and Department of Energy. The fact that the 65 nuclear power sites have not invested in JTS is evidence that the utilities place more value on cost savings than on providing adequate security. In fact, POGO was told by a federal official that the utilities which operate the Oyster Creek and Limerick plants, rather than using the higher-tech, more realistic approach, rely on the rudimentary system of moving colored clothespins on a board to symbolize the actions of terrorists and guards.

To actually test the security forces, the NRC conducts mock terrorist attack tests which are run by the Operational Safeguards Response Evaluation (OSRE) program. Prior to 9/11, these mock attack tests occurred only once every eight years. A few days before the one-year anniversary of 9/11, the NRC issued a press release announcing that it is planning to begin conducting these tests every three years.[41]

In the months leading up to a mock attack test, the utilities hire security-training consultants and additional guards to improve their security posture and chances of success. Even a nuclear industry representative acknowledged that utilities spend "millions of dollars" getting ready for the tests.[42]

The guards said that for months prior to a test, they repeatedly practice for the two or three scenarios on which they will be tested, often with the help of the consultants. The problem, according to the guards, is that they train only on the particular attacks that will be used in the test rather than on many different types of attacks. Once the tests are completed, the security consultants are let go and the guard force reduced until the next test. (Appendix C, E, H, I, J, K, and M)

Between 1991 and 1998, OSRE tests were conducted at 57 sites. The NRC Director of Operations wrote to NRC commissioners, "... OSRE teams identified weaknesses at 27 plants; some

[40] http://www.house.gov/markey/iss_nuclear_rep020325.pdf, Downloaded August 27, 2002.

[41] http://www.nrc.gov/reading-rm/doc-collections/news/2002/02-106.html, Downloaded September 7, 2002.

[42] http://www.nrc.gov/reading-rm/doc-collections/commission/tr/1999/19990505a.html, p. 89, Downloaded August 27, 2002.

of these weaknesses related to failures to prevent mock adversary forces from gaining access to vital equipment."[43]

In 1998, the NRC terminated the OSRE program during a budget battle with Congress, presumably because these tests repeatedly delivered bad news. After the *Los Angeles Times* broke the story and the non-profit Committee to Bridge the Gap and Representative Markey raised a fuss, the White House became involved and the testing program was reinstated.[44]

When the mock force-on-force tests resumed, the news was no better. NRC Chairman Meserve himself admitted,

> "In 37 of 81 OSREs [46% of the security tests] conducted between August 1991 and August 2001, the NRC identified weaknesses. For those plants at which a weakness was found, the attacking force was typically able in one of the four exercises to reach a target set and simulate destruction of that equipment. ... the utility's performance is judged unsuccessful for the scenario if the response force is not able to prevent the adversary from disabling and/or destroying all pieces of equipment/actions in a target set. ... Historically the OSRE team based its conclusions concerning weaknesses in the utilities' response strategies on whether the utilities had the capability (1) to respond with a sufficient number of armed personnel, (2) who were appropriately armed, (3) to protect positions, (4) in time to interdict the adversary before the adversary completed its attack. Cases in which a utility was unable to satisfy one or more of these criteria would indicate that the adversary could cause an act of sabotage resulting in a loss of a complete target set (i.e., the equipment necessary to be protected to prevent core damage)."[45]

In other words, according to then-OSRE program manager David Orrik, even with adequate time for the plants to prepare and make themselves ready for the OSRE, 46% of them still had a weakness in armed response which allowed the mock terrorists access to parts of plants where a real act of sabotage could have led "in many cases to a probable radioactive release."[46] If a facility fails a test, it is allowed to continue operating.

OSRE tests have been on hold since 9/11 and are not expected to resume until early 2003 – 18 months after 9/11.

In a real attack, the one overwhelming advantage terrorists would have is the element of surprise. During these mock drills, however, this element is completely missing and no effort has been made to compensate for it. Another important artificiality of these tests is the missing chaos

[43] http://www.nrc.gov/reading-rm/doc-collections/commission/secys/1999/secy1999-024/1999-024scy.html, Downloaded August 29, 2002.

[44] "U.S. Drops Anti-Terrorist Tests at Nuclear Plants; Security: Shrinking Budget is Cited. Simulated Attacks had found Serious Lapses at Half of Nation's Reactors," *Los Angeles Times*. November 3, 1998.

[45] http://www.house.gov/markey/iss_nuclear_ltr020325a.pdf, Downloaded August 29, 2002.

[46] http://energycommerce.house.gov/107/hearings/04112002Hearing532/Orrik908.htm, Downloaded August 27, 2002.

and violence that would take place during a real terrorist attack – grenades exploding in relatively close quarters in buildings, human carnage, and other unanticipated events.

Yet another artificiality of force-on-force tests involves "combat effectiveness." Military doctrine dictates that when losses exceed 20%, forces become combat ineffective due to loss of command, communications and basic squad-sized tactics. As the OSRE tests typically do not recreate this "fog of war," the guard forces are not tested under the realism of watching their colleagues be maimed or killed around them. As an Army Special Forces Commander wrote:

> "As a unit sustains casualties (dead or wounded) elements of the fire and maneuver schemes or 'close quarter battle' drills begin to come apart. ... [I]f casualties are high (in excess of 10%) qualified replacements become increasingly problematic and command and control begins to be lost. Units are normally considered 'combat ineffective' and are rotated off the line when they have sustained 15-20% casualties. ... Continuation would be expected to result in unnecessary and increasingly high casualties with little expectation of success." [47]

POGO was told by one nuclear power plant guard with military experience, that he raised this problem with management, but the plant has not addressed it. (Appendix E)

Prior to 9/11 the NRC agreed to pilot a Safeguards Performance Assessment program that permitted less direct involvement by the OSRE office in conducting security tests and more industry self-assessment of security. The idea has not yet been implemented, but it is both telling and alarming that the NRC ever even considered giving the utilities that much latitude, particularly in light of their resistence to the guards' concerns.

The most significant problems with the NRC mock attack tests are: [48]

- The NRC gives utilities six- to 10-months advance notice before the test;
- Utilities get to choose the kind of attack and to provide the mock terrorist force;
- The adversary force in the mock attacks varies from plant to plant and is often not trained to test security at nuclear power plants. The adversary forces can be county or state police or incredibly even a utility's own management or training staff – the very people who have a stake in ensuring success;
- The tests virtually never include the help of an "active insider;"
- The mock "terrorists" do not attack by boat or helicopter, or from several directions. Instead, they only attempt to enter the plants as a single team from a single location.
- Guards have told POGO they do not carry their communications gear or their semi-automatic weapons nor wear their bulletproof vests. However, when a mock attack

[47] For further discussion please see http://www.pogo.org/p/environment/eo-011003-nuclear.htm.

[48] http://energycommerce.house.gov/107/hearings/04112002Hearing532/Orrik908.htm, Downloaded August 27, 2002. Guards and former guards have provided the rest of this information in interviews with POGO.

is about to take place, the guards unrealistically are wearing bulletproof vests and are carrying communications gear and semi-automatic weapons. They also have pre-positioned a supervisor or responder in otherwise unprotected but vulnerable pathways.

- The NRC requires protection against only three "terrorists" during mock attack tests. Despite the NRC's Threat Assessment Team recommendation to significantly upgrade the DBT, no deadline has been set for making it more realistic.

- The mock terrorists are not equipped with the weapons expected to be used by real terrorists, and that are readily available on the open market.[49] Nor do they use diversionary tactics, such as remote controlled explosives, to confuse the guards during attacks.

- Rubber guns, flashlights and whistles are often used during mock attack tests and drills to simulate guns, with umpires or controllers making the call as to whether a guard or terrorist has been "hit" during an attack. Many of the guards complained that the utilities do not use laser or paintball weapons-simulation equipment to more realistically assess hits or misses, as does the military and Department of Energy.

- Utilities do not use up-to-date vulnerability assessments, determination of worst case scenarios, or Joint Tactical Simulations to determine best defensive tactical responses. The simulations are used extensively by the military and the Department of Energy. Instead the utilities rely on rudimentary board games, even sometimes moving clothespins around as little guards and terrorists, much like chess pieces on a chessboard.

Despite this dumbing-down of the OSRE tests, the utilities, and the NRC, itself complain that they are in fact too difficult. NRC Chairman Meserve described them as "very hard tests."[50] For example, according to NRC insiders, during an OSRE force-on-force at Oyster Creek one of the mock terrorists took the badge off a "dead" guard, and used the badge to enter a building unchallenged. The utility was furious, complaining to NRC Commissioners that this was cheating because such a tactic had not been scripted.

Despite the clear imperfections that favor the guard forces, credible force-on-force tests are still one of the best measures of the performance of a guard force in protecting a nuclear facility. Utilities can approach these exercises as a necessary and important part of running a nuclear power plant. For example, in 1998 the manager of security at the San Onofre plant pointed out,

[49] The following is a partial inventory of the unclassified Adversary Capability List now used by the Department of Energy, but ignored by the NRC: 50-caliber API sniper rounds that can penetrate hardened guard posts and vehicles; grenades; satchel charges; claymore mines; stay-behind infrared activated mines; 302 sniper rifles; RPG-7s; shoulder-fired TOWs and Light Anti-tank Weapons; and simulated chemical or biological agents that would require the guard force to be trained with gas masks.

[50] http://www.senate.gov/~epw/Meserve_060502.htm, Downloaded August 26, 2002.

"Conducting your own drills is like a practice session. Operational Safeguards Response Evaluations was like the big game."[51]

NRC Turns A Blind Eye to Spent Fuel Pools

The NRC has never performance tested a power plant guard force's ability to protect spent fuel pools – possibly the prime target of a terrorist attack. In October of 2000, the NRC started to recognize the problem of spent fuel fires in a study of the effects of accidents. However, in over 100 pages of analysis, they never considered sabotage by terrorists.[52] The vast majority of spent fuel pools are outside the containment buildings. Several spent fuel pools at nuclear power plants across the country are only about 50 yards from the double fence line. Some of the guards estimated that a terrorist could penetrate the fence line and the spent fuel pool, in 20 to 60 seconds.(Appendix B, E, G, and N)

POGO has been advised by military Special Forces sources of specific and obvious vulnerabilities at the spent fuel pools at most nuclear power plants. To explain in general terms, a certain type of explosive, which a terrorist could carry on his back, would allow him to blow a sizeable hole in the reinforced concrete bottom or wall of a spent fuel pool. At nuclear plants that have boiling water reactors (about one-third of existing reactors) things could be even worse. In these cases where the spent fuel pools are above ground and not inside the containment building, a certain kind of explosive could be launched from outside the fence line into the side of the pool – the terrorists would not even have to enter the secured area.

According to an unclassified study by Brookhaven National Lab, under certain conditions the pool would start draining immediately. This could result in the immediate release of high levels of radiation, quickly turning into an uncontrolled radioactive fire, and the plant could do nothing effective to stop it. This report found that a severe fire in the spent fuel pool could render about 188 square miles uninhabitable, cause as many as 28,000 cancer fatalities, and cost $59 billion in damage. [53]

Both the October 2000 NRC staff report and the Brookhaven report were embarrassing for the NRC. In a recent meeting with an NRC Commissioner, POGO was told that the calculations of both reports were not endorsed by the Commissioners, and will be redone.

In addition to the NRC studies, other experts have calculated clearly that spent fuel pools could be targets of opportunity and could result in catastrophic radioactive fires if the water were

[51] "U.S. Drops Anti-Terrorist Tests at Nuclear Plants; Security: Shrinking Budget is Cited. Simulated Attacks had found Serious Lapses at Half of Nation's Reactors," *Los Angeles Times*. November 3, 1998.

[52] "Technical Study of Spent Fuel Pool Accidents at Decommissioning Plants," Nuclear Regulatory Commission, October 2000.

[53] NUREG/CR-6451, "A Safety and Regulatory Assessment of Generic BWR and PWR Permanently Shutdown Nuclear Power Plants," Prepared by Brookhaven National Laboratory for U.S. Nuclear Regulatory Commission, August 1997.

even partially drained from the pools. The NRC concedes that such a fire cannot be extinquished: it could rage for days. The Institute for Resource and Security Studies determined, "If a fire were to break out at the Millstone Reactor Unit 3 spent fuel pond in Connecticut, it would result in a three-fold increase in background exposures [over natural radioactivity]. This level triggers the NRC's evacuation requirement, and could render about 29,000 square miles of land uninhabitable."[54]

Decommissioning Reactors: NRC's Poor Stepchild

There are 12 decommissioning nuclear reactors in the United States. There is no longer fresh nuclear fuel in these reactors, and therefore the reactor containment domes would not be a desirable target for a terrorist attack. However, there are still hundreds of tons of spent fuel in the pools at these reactor sites.

Because it was believed, by the NRC that spent fuel and particularly older spent fuel was no longer a potential target of a terrorist attack, the NRC allowed the power companies to virtually "gut" the security at the decommissioning plants, as one guard put it. According to this guard, the utilities were allowed to take the alarms off the fences, eliminate semi-automatic rifles and shotguns, and significantly reduce the guard force. Prior to 9/11 there was even a plan to move to unarmed guards. The site would then be totally dependent on outside responders. In one case, those responders would be six state police troopers with handguns and a few shotguns to respond to the attack. The response time would be from 30 minutes to an hour – long after an attack would be over. Since 9/11, at least one of the guard forces has been re-issued shotguns. However, they have never had an exercise with the state police. Keep in mind, the terrorists would likely be attacking with automatic weapons, explosives, long-ranged sniper rifles and other advanced weaponry, for which a shotgun is no match. (Appendix B)

Letting Utilities Focus on Compliance Rather than Performance

The mindset of both the utilities and the NRC is heavily compliance-oriented. If a utility has submitted a security plan to the NRC that meets requirements such as the presence of a double-fence, alarms and a certain number of guards, it feels confident to boast that it is secure. However, the NRC mock attack performance tests repeatedly reveal that despite compliance with requirements, many guard forces could not repel even a mock terrorist attack.

Several guards told POGO that when they raise security concerns with their utility, they are regularly told that security upgrades are unnecessary because the utility is already in compliance with NRC regulations. As one guard put it, "...but compliance doesn't mean you can stop a terrorist." (Appendix H, I, J, L, M, and P)

For example, nuclear plants are "in compliance" as long as they require annual weapons qualification. As a result, annual requalification is the *only* opportunity many plants give guards to train with their weapons.

The utilities are also more focused on compliance with NRC regulations than performance when it comes to the fitness for duty of the force guarding the plants. The utilities and their security

[54] Robert Alvarez,"What about the Spent Fuel?," *The Bulletin of Atomic Scientists,* January/February 2002, Vol.58, No.1, pp. 45-47.

subcontractors are regularly forcing guards to work up to 72 hours per week, the maximum number of hours allowed by the NRC, despite the compromised security that results from a heavily-fatigued guard force which has worked six consecutive days of 12-hour shifts. Although a 72-hour work week is only supposed to occur under extraordinary circumstances, the utilities are still in compliance even though they are requiring this overtime on a regular basis. (Appendix G and U)

This institutionalized bureaucratic complacency is a major impediment to adequate security. A post-9/11 example of this phenomenon is that armed guards are now required to accompany all visiting trucks coming onto nuclear power plant sites. That sounds wise, but POGO has been told that there are often no extra guards available for that duty and therefore guards leave their post unmanned to accompany the trucks. In situations such as this, the facility may be in compliance, but guards are concerned that there is a hole in their defensive posture. (Appendix H, I, and J)

Inadequate Whistleblower Protections

While some guards have reported their security concerns to management and regional Nuclear Regulatory Commission offices, many have not. Retaliation by a utility and/or its contractors against whistleblowers is a reality. Even under the best circumstances, a guard is risking his job in order to report security concerns. In POGO interviews, guards repeatedly expressed their fear of being fired or retaliated against for publicly expressing their concerns about security weaknesses. Indeed, during the course of its investigation, POGO learned of two guards who were fired in recent months by Wackenhut after expressing concern about their ability to remain alert while on duty as a result of fatigue-causing 72-hour work weeks. Although several laws provide whistleblower protections, they have clearly failed to alleviate the chilling effect of the corporate security contractors' heavy hand aimed at silencing concerned guards.

Two statutes in particular allow nuclear power plant security guards to seek reinstatement of their jobs and lost wages if they have experienced retaliation for blowing the whistle. The first is Section 211 of the Energy Reorganization Act (ERA), which provides any employee working for a nuclear power or weapons facility, either as a full-time employee or a contractor, the right to seek remedies for whistleblower retaliation. The ERA is considered a stronger statute in comparison to other environmental whistleblower protection statutes because it allows the NRC to investigate prevailing whistleblower retaliation cases in order to root out the sources and causes of retaliation. In addition, the burdens of proof are much fairer to the whistleblower under ERA than under the whistleblower provisions of the Clean Air Act and Clean Water Act. However, the appeal process for ERA whistleblower cases leads into administrative proceedings at the Department of Labor (DOL) where cases can languish for months and even years (for example, whistleblower Casey Ruud's case has taken 14 years and is still ongoing). This situation makes it difficult for whistleblowers to obtain relief. As a result, there is enormous pressure on most ERA whistleblowers to settle their cases rather than fight to the bitter end.

The second statute, the 2002 Corporate Accountability Act, now provides protections to guards and other nuclear power plant employees working at publicly traded corporations. One of the most positive aspects of the Act is that if the DOL does not issue a ruling on an appealed whistleblower case after 180 days, the whistleblower has the right to a jury trial in a U.S. District Court. This prevents DOL from becoming a black hole as has often happened in ERA whistleblower cases. Similar to the ERA, the legal burdens of proof under the Corporate Accountability Act are much more fair to the whistleblower than other environmental whistleblower protection provisions.

POGO Recommendations

1. The NRC should:

   - Significantly upgrade the design basis threat or DBT. Some Members of Congress have recommended increasing the number of outside attackers from three to 19 or 20 – comparable to the 9/11 attack. An internal NRC recommendation was to more than triple the current number to ten. The DBT should also include chemical and biological attacks; diversionary tactics used to confuse the guards; attacks from multiple entry points; and a substantial upgrade in the weaponry, explosives and tools available to the terrorists;

   - Only consider the security of a plant satisfactory if it has successfully passed a credible performance test, not whether the plant is simply in compliance with NRC regulations;

   - Create a prioritized target/assets list, and immediately include spent fuel pools on that list as a primary terrorist target;

   - Apply its new "Fatigue Rule" to security guards;

   - Terminate the pilot Safeguards Performance Assessment program. The program is meaningless and irresponsible as it permits less direct involvement by the NRC in conducting the exercises and more industry self-assessment of security;

   - Require a two-man rule in vital areas, in order to reduce the risk of "insiders;" and

   - Increase the budget of the OSRE staff so it can conduct more frequent and realistic performance tests.

2. The OSRE staff should:

   - Conduct force-on-force performance tests every two years. The recent NRC announcement that tests will begin to take place every three years is a step in the right direction;

   - Give no more than two to three weeks notice of upcoming OSRE force-on-force tests, rather than six to 10 months. At the moment of notification, utilities should be required to freeze the guard force to be tested in place, rather than calling in their most capable guards;

   - Choose the scenarios to be tested, rather than allowing the utilities to choose them. The guards to be tested should not be told of the scenarios in advance;

- Use the military Special Forces units which are already trained to test security as the adversarial team in force-on-force tests. The utilities currently choose the adversarial force – incredibly sometimes even using utility management personnel as the adversary;

- Use more realistic weapons, explosives, tools and tactics during force-on-force tests;

- Include outside responders as participants in the mock attacks with realistic timelines for arriving at the plant;

- Include performance testing of security at the spent fuel pools at both operating and decommissioning reactors in force-on-force tests; and

- Perform unannounced limited scope security checks, in addition to their mock terrorist attacks, in order to combat the complacency that guards naturally feel.

3. The NRC should require utilities to:

- Maintain guard force size and other security measures they used to pass an OSRE tests;

- Equip their guards with upgraded weaponry that is at least equal to that which they would face in a terrorist attack;

- Add barriers and delay mechanisms to supplement security around spent fuel pools until the fuel rods are placed in dry casks underground;

- Upgrade weapons and tactical training at least to the level the nuclear industry claims they require in their ads;

- Give their security forces pay and benefits, such as health care coverage and retirement, commensurate with those accorded onsite fire departments and local police;

- Hire security directors with a background in physical security;

- Use up-to-date methods of vulnerability assessments, determination of worst case scenarios, and Joint Tactical Simulations to determine best defensive tactical responses;

- Make laser or paintball weapons-simulation equipment available, at least regionally, for more realistic force-on-force training exercises and OSRE tests;

- Immediately institute compensatory measures to address the vulnerability of a plant that fails a mock attack test, and to allow a utility 30 days to have permanent fixes in place. Within 45 days, the NRC should performance test the plant again. If the security forces fail a second time, the plant should be shut down until the vulnerability is fixed; and

- Conduct ongoing, limited-scope performance tests to test the timelines for terrorist access to critical target sets.

4. Congress should:

- Reconcile the conflicts between the "use of deadly force doctrine" and "rules of engagement" by the guard forces and various state laws.

- Expand whistleblower protections to those nuclear power plant employees who report their concerns to people other than Congress. Congress should also extend genuine whistleblower protections to NRC employees who report their concerns.

- Create a small independent Agency of Nuclear Security Oversight, perhaps as an independent agency reporting to the Congress and President. Its mission would be to provide independent and rigorous oversight and to test the security at all of the nuclear facilities now overseen by the NRC and the Department of Energy. History has shown that the critical job of security oversight cannot be adequately performed from within these agencies. **The Agency would be a combination of the NRC's OSRE office and the Department Of Energy's (DOE) Office of Independent Oversight and Assessment.**

- Pass legislation to force the NRC to address the above concerns if they are not immediately addressed by the NRC. The Nuclear Security Act of 2002, which passed unanimously out of the Senate Environment and Public Works Committee, would address many of these security inadequacies, and should be passed.

Acronym Glossary

API - Armor-Piercing Incendiary

AR-15 - ARmalite Rifles

BWR - Boiling Water Reactor

CFR - Code of Federal Regulations

DBT - Design Basis Threat

DOE - Department of Energy

DOL - Department of Labor

FBI - Federal Bureau of Investigations

FEMA - Federal Emergency Management Agency

GAO - General Accounting Office

HAZMAT - Hazardous Materials

IG - Inspector General

JTS - Joint Tactical Simulation

MILES - Multiple Integrated Laser Engagement System

NCI - Nuclear Control Institute

NEI - Nuclear Energy Institute

NRC - Nuclear Regulatory Commission

OSRE - Operational Safeguards Response Evaluation

PSEG - Public Service Electric & Gas

PWR - Pressurized Water Reactor

RPG-7 - Rocket Propelled Grenade (An anti-tank grenade launcher)

SO - Security Officer

SWAT - Special Weapons and Tactics Team

TOW - Tube-launched, Optically tracked, Wire-guided missile

UCS - Union of Concerned Scientists

Statement by Guard A.
Approved September 5, 2002

He has been a guard at the plant for over 20 years. He has no retirement plan.

The guards are working 12 hour shifts, six days a week overtime – staying in compliance with the NRC by not working over 72 hours. The guards have serious fatigue and alertness problems on days 5 and 6, particularly on the night shift.

In early September a guard refused to work his sixth consecutive 12-hour shift and was fired by Wackenhut.

"Morale sucks."

He talked to the NRC regional people about the problem of overtime, fatigue and morale, and there is no interest.

Wackenhut can not keep people. 70% of the guards have under one of year experience, 50-60% of the guard supervisors have less than one of year experience. However, management claims publicly there is only a 15% turnover rate.

They have handguns, shotguns, and recently got AR-15s.

They were recently ordered to carry their primary weapon for the first time.

He feels it is a serious problem that the DBT is essentially the same as when he arrived over 20 years ago.

The guards "don't think much of [the current DBT]"in light of the events of 9/11.

He believes they have a fair chance of beating the current DBT, but not if it is increased.

Less than 20% of the guards are former military or law enforcement personnel.

He does not trust the NRC – "They're more of a cheerleader for the nuclear industry than a watchdog."

Confusion on the guard force over the use of deadly force is a real problem.

He does not believe the utility is serious about threats to the facilities.

It will take a long time for the NRC and licensee to get their act together to adequately defend the plants.

Statement by Guard B. at Decommissioning Reactor
Approved August 26, 2002

When the plant was shut down they "gutted" security – down to two armed responders per shift. It is important to note this is less than even the current DBT.

Alarms were taken off fences. The woods are close to the fence line. He believes that it would take about 20 seconds for a terrorist to get from outside the single, unalarmed perimeter fence to the spent fuel pool.

The restrictions on the use of deadly force is a major problem. If someone comes over the fence with a backpack, and no visible gun – the guard can't shoot. He reports to the Sgt., and the Sgt. cannot order a guard to shoot, so the guard is virtually on his own. If they can't intercept the terrorist before he gets inside the spent fuel pool, the guards can only call the local police.

He believes there is no way terrorists could be intercepted prior to their access to the spent fuel pool.

These guards no longer have semi-automatic rifles. Prior to 9/11, the security plan was being downgraded so that the guards would be totally unarmed, and completely dependant on the state police for response. Until 9/11, they only had hand guns. Now they have shotguns. They have flak jackets [bulletproof vests] only to repel handgun fire, but they don't wear them. "They are worthless."

The only shooting they do is during their annual qualification on their hand gun and shotgun. There is no tactical training at all.

"If an attack took place, most of the guards would run like hell." (Appendix M) The morale is "lousy because of the overtime and wages." The experienced guards are looking for other jobs because the current job is a dead end – at some point, they will have all the fuel in casks and moved out. They can't get qualified guards because it's a dead end job. Less than one-third of the force has prior military or law enforcement experience.

Their security plan expects them to hold off the terrorists until outside responders arrive, which at best are six state troopers arriving supposedly within half and hour. This has never been tested, and he believes it would be closer to an hour. Some of the State police have shot guns, others only have handguns. He said that both the guard and state police shot guns are ineffective beyond 100 yards.

They only have paper drills, no force-on-forces.

Statement by Guard C.
Approved August 26, 2002

There is no retirement plan. There is a 401k, but the utility does not match it. Most guards can not afford family health insurance. Morale is very low.

Ten to twelve guards are looking for jobs in airport security. About 20% of the guards have four or more years of experience. Over 60% have less than one year experience.

Because of morale problems, one experienced guard at this facility believes that between 70% and 80% of the guards would drop their weapons and leave if the plant were attacked.

Between annual firearms qualifications, there is no target practice. Currently they are on 12 hour shifts – five to six days a week. There is a problem with staying alert. Often they don't get days off.

This guard thinks OSRE was "totally artificial." Months of training, guards not usually at the posts in the area of attack, no multiple entries, no diversions.

Outside responders are two utility guards who are relatively close to the plant. They have never exercised with outside responders.

There have been discussions about using off-shift guards in a crisis – but they have caller ID and would not answer the phone. If they did respond, they would come unarmed – so it is a worthless plan.

They have M-16 semi-automatic rifle, shotguns and handguns. Some only have access to shotguns. They have flak jackets [bulletproof vest], which only protect them against handguns. They do not wear them.

The use of deadly force doctrines are a problem. They would have deep trouble with a guy with a backpack scaling the fence. They at least need signs on the fence warning people deadly force would be used if unauthorized entry.

With the confusion over deadly force, they have a saying, "I'd rather by tried by 12, than carried by six." Meaning, they would shoot first and go before a jury, rather than be carried in a coffin by 6 pallbearers.

Statement by Guard D.
Approved September 7, 2002

To be a guard requires a two income family. Because he's worried about his safety, he bought private life insurance. He's concerned about disability benefits, as they would only pay about $1000/month, which is barely enough for his mortgage. If disabled, he believes he'd lose his house in six months.

Things have improved significantly since 9/11. The plant got a new person in charge of security with a military background. The plant has tripled the size of their guard force since then. The economy in the area has been so bad that recruiting has been easy.

He believes about 50% of the guard forces have military or law enforcement background. They do force-on-force drills quarterly with mock guns and controllers. He believes they should use laser or paint ball systems to test security too.

They are starting to create and train an adversary team. He believes it was questionable whether they could have defeated the DBT prior to 9/11. Now they are confident they could defeat even a more robust DBT using special forces as the adversary.

They can't depend on outside responders. Tabletop tests have shown about a two hour response time.

Use of deadly force is still a problem. They do not have a firing range at the plant.

They are on 12-hour shifts, working 49 hours one week, and 36 hours the next. During outages, they do work 72 hours in a week.

They only fire their weapons annually, during their qualification, lasting around two hours.

Statement by Guard E.
Approved August 23, 2002

He was in the military for seven years, and was hired after 9/11. The plant has increased the number of guards since 9/11 by 30%.

They have 9mm handguns, shotguns and AR-15 rifles. Over 50% of the guard force is former military or law enforcement. The average age of the guard force is around 50. Many have 12-19 years experience.

Some are happy with the benefits. However there is no retirement plan and you must pay a portion of the health coverage.

Morale is relatively strong. He believes the guards would probably stick around in the event of an attack.

The plant is in a rural area where there are not many other jobs. He thinks most of the more experienced guards stay for the health benefits. They do not want to have to leave the area for better jobs.

They had an OSRE test in the late 90s. The guards who were there at the time say they passed after having geared up substantially. They hired a security consultant and conducted a huge number of drills in preparation.

He is aware of the "combat effectiveness" issues from his military experience. Their initial losses, in force-on-force drills have been heavy, and would seriously degrade the guard force's ability to respond. He believes this would be a real problem. He has raised the issue with management and during training sessions, but management has not addressed the issue.

"There's a real problem with alertness." They have gone to three eight-hour shifts. "There's a major problem with guards sleeping – especially on the night shift." They have installed computers on post to keep guards awake. "It's better to have them surfing the internet than falling asleep."

The spent fuel pool is between the reactors and about 150 feet from the perimeter double fence. The pool is above ground and could definitely be hit from outside the fence line.

If the terrorist used grenades inside one of the target buildings, it would be devastating – bleeding ears, etc.

Confusion over the use of deadly force is a huge problem. "You need to make split second decisions whether to shoot or not shoot that could save your life." Once while he was on duty a person drove past a check point, despite the lights and sirens, and toward the secure area. The car got all the way to the secure area, turned around and sped out. Because they were not allowed to shoot at the car, he got away before they could stop him. They are taught if an intruder enters the grounds, unless he wields a weapon and the guard believes his life or the life

of another is in danger, the guard can only observe and report the incident. He says, "If you pull your trigger, you're on your own, and you'll need a good lawyer."

The guards are not happy with the artificiality of force-on-force drills at the plant, using rubber guns, flashlights and umpires. He thinks they should use the MILES [laser tag] equipment he used in the military.

He can not believe the DBT has not been upgraded.

Every six weeks they do some shooting at their range, and have an annual qualification. Up until the last few weeks they did not have gas masks. Two weeks ago is the first time they fired a weapon with it on.

The Sheriff and State Police troopers believe they can be there within 10-15 minutes. They have never practiced with outside responders, and have never tested the response timelines.

Generally, during their force-on-force exercises, the attack is over – one way or the other – in less than five minutes. So outside responders are useless.

Statement by Guard F.
Approved September 3, 2002

He served in the military for 20 years.

"The NEI is fooling the public, which is outrageous." NEI claims a guard gets 270 hours of training before beginning his job. "Maybe if you add the training hours of all the guards together."

The security at the plant is not adequate, and he can not believe that it is any different at any of the other plants.

He thinks the current DBT is stupid.

The company pays for life insurance for the guards. The coverage is $25,000, with an additional $25,000 for accidental death, but he does not know if being killed by a terrorist counts as "accidental."

Guards are required to fire their weapon twice a year, including qualification. He has the option of shooting two additional times on company time. Actual shooting time is one to one and a half hours per occasion.

He believes the number of hours of weapons training is irrelevant or is a moot issue, though, because a guard can be an excellent shot, but if he is out-gunned, he dies. Even if the company hires more guards, if they are still out-gunned it just means that there are more guards to die. For instance, two guys in Los Angeles wearing body armor and carrying automatic weapons and a hell of a lot of ammunition took on the LA cops, who were equipped with shotguns and pistols. The two guys killed seven cops and almost got away.

It is impossible to keep the terrorists out of key buildings until help arrives. The outside responders are never performance tested. They can not get there in time because the battle is over in five minutes.

The tactic is to fall back and protect the vital areas. But if you do fall back, you are out of luck. Grenades tossed into an enclosed space will be a real problem – they cause bleeding ears at the least. If the terrorists get inside the reactor building, they can go anywhere from there. You have to engage the terrorists in the open with equal or superior firepower.

The radio procedure is also a problem. At the beginning of each shift, the guards are required to do a radio check. The terrorists could listen in, and they would then know how many guards were on and where those guards are.

Statement by Guard G.
Approved September 5, 2002

He works for Wackenhut. A number of guards are applying for jobs as baggage screeners, because of better pay and hours.

"Morale is low. Most guards are fed up."

In the past, they worked 12-hour shifts six days a week to get ready for an OSRE test. They are now working this same kind of schedule after 9/11. They have increased the size of force, but are also putting in outrageous amounts of overtime. Fatigue is clearly a problem.

They just stay below the NRC limit of working 72 hours in one week so they are in compliance with regulations.

They recently nearly doubled the guard force and were given AR-15 semi-automatic rifles. Until then, they only had shotguns.

The only required practice shooting is during their annual qualification, but they can go to the practice range an additional three times with pay. But, because of the overtime and scheduling, very few do. They spend about two to three hours a year practicing with their weapons.

Their only moving target practice is with a figure dragged across the range.

There are no National Guards at the plant. Their inability to defeat the current DBT is problematic. Even still the guards are concerned that the DBT is too low.

Deadly force rules are a major problem – they are only allowed to observe and report an attack.

He believes the nuclear industry does not believe there is a threat, and that the guard force is treated as a drain on profits.

Statement by Guards H., I., and J.
Approved April 2002

Inadequate Number of Guards, Equipment, and Training

The number of guards required at their plant – and they suspect all of the country's nuclear power plants – is inadequate to protect the plant from terrorists. National Guardsmen were posted outside their plant after Sept. 11 but anti-terrorist training has not been stepped-up, otherwise.

The number of armed guards at their plant was actually reduced by 20% several years ago after a successful test of the plant's armed response capability by the Nuclear Regulatory Commission (NRC). The test was conducted by the NRC's Operational Safeguards Response Evaluation (OSRE) program. The number of guards has ramped up since Sept. 11 but is still insufficient.

The number of vehicles provided to the guards to conduct patrols is inadequate.

Contrary to the images in full-page advertisements that have been running recently in Washington D.C., the guards at their plant are equipped with 9-millimeter pistols. The ads, sponsored by the Nuclear Energy Institute, the nuclear power trade group, lead Congress and the public to believe the guards at nuclear power plants are roaming the plants equipped with automatic or semi-automatic weapons and flak jackets.

Their utility falsely claims that armed guards are at its security center at all times but those guards often are used by the utility for many other functions, such as escorting trucks and visitors, and are not always in a posture to respond to a threat or attack. Sometimes these other duties result in the perimeter guard shacks being left unmanned.

To give the impression that the plant is better protected than it is, their utility falsely claims some of its employees other than guards are armed. These employees have had firearms training but have no immediate access to firearms.

Even though the Nuclear Energy Institute's ads claim that the guards at nuclear power plants are "well-compensated," the guards claim that they are the lowest paid workers at their plant, ranking below even forklift operators, janitors and storeroom employees who hand out equipment. Considering the ultimate sacrifice they are asked to make, namely their lives in the event of an attack, the guards believe they should be given more resources for training, equipment and salaries.

Unrealistic Testing

The mock attack OSRE tests staged by the NRC are unrealistic.

The utilities are notified months in advance – often as many as six to 10 months – that an OSRE test will be conducted.

The NRC requires OSRE tests only once every eight years. This is clearly inadequate to ensure security and compliance. The guards have not been notified any more OSRE tests are planned in the near future at their plant.

The utilities are allowed to choose what kind of scenario they want conducted during the OSRE tests and the target of the attack. They practice repeatedly for that particular scenario, often with the help of consultants hired to train the guards for that particular kind of attack.

Their utility picks its best guards for its OSRE tests, meaning the guards who participate in the tests are not representative of the actual guard force. Plus, guards are given overtime to prepare for and engage in the mock tests. They are not normally given so much overtime, making the exercise all the more contrived because more guards are available during testing periods than on typical days.

An OSRE test done a few years ago at the guards' plant did not equip the mock terrorists with 50-caliber armored piercing incendiary (API) sniper fire though any relatively sophisticated terrorist group would most likely use these rifles.

The OSRE tests assume the guards will prevent terrorists from entering the reactor or spent fuel pond buildings and therefore do not even test any scenarios in which they are able to gain access to these sensitive areas. If terrorists do get inside these buildings, the guard force has inadequate manpower to protect them.

If terrorists get inside a control room, the guards depend on state and local police and sometimes federal law enforcement officials to respond. At their plant, it could take up to two hours. However, generally, these battles would be over in a matter of minutes.

The OSRE tests done at their plant do not consider the possibility that terrorists would use diversionary attacks – such as placing remote control explosive devices at one location and attacking another. If that happened, the guards would most likely be told to leave their posts and react to the diversion.

Other Concerns

Utilities like to crow that they are "in compliance," but even when nuclear power plants are technically in compliance with federal regulations, they often would not be able to guard against terrorist attacks. "Being in compliance doesn't mean that the plant could stop someone from breaking in," one longtime guard said.

Security is focused on the reactors while not enough attention is paid to the vulnerability of the spent fuel pools. At their plant, the spent fuel pools are in concrete block structures outside the containment buildings. The guards believe that it would take a group of terrorists only about 60 seconds to reach the highly dangerous spent fuel pools from the security fences.

The utility does not assume the worst case scenario through vulnerability assessments or use computer simulated Joint Tactical Simulations (JTS) to determine the best defensive tactics. Both are used extensively by the military and the federal Department of Energy.

Addendum to Statement by Guard H.
Approved August 29, 2002

Firearms training requires only that the guards be capable of standing and kneeling and hitting a stationary target 25 yards away with their handguns; 15 and 25 yards away with their shotguns; and 50, 75 and 100 yards for rifles; and that they are only qualified on a shooting range once a year. This is the state mandated firearms course. Their tactical training consists of 200 yards on the ground stationary for 10 rounds, and on a platform stationary from 200 yards for 10 rounds.

The only time they are required to shoot their weapons is during this annual qualification – which typically lasts a total of six hours. Actual time shooting a weapon is about two hours per year. Guards have only had minimal training or practice in shooting at a moving target with their handgun – approximately ten rounds. That is the only practice they get shooting at moving targets. The guards have never practiced the effect of firing a weapon from inside their bullet resistant enclosure. They are told by state police that it is so loud, they would be rendered useless without hearing protection. None of these procedures have ever been practiced.

Armed guards are now required to accompany some visiting trucks coming onto nuclear power plant sites. There are often no extra guards available for that duty and so guards are either called in on overtime, or they are pulled from their defensive posture post to accompany the trucks. When this happens, even though the facility may be in compliance, there is a hole in the defensive posture.

Armed guards are almost routinely sent home to go down to the minimum number of armed guards and still be in compliance with NRC regulations. The contractor is ordered by the utility to go to this minimal compliance requirement in order to cut costs. He is angry that the state taxpayers have to foot the bill for the state police, local law enforcement and National Guards around the perimeter, while the utility is sending home armed security guards on a regular basis.

In November of 2002, two months after 9/11, the utility's security manager admitted that if a terrorist attack happened, "they (the terrorists) would come trained and armed to the hilt, and the plant would be wiped out in 20 minutes." This same security manager was responsible for setting up the defensive strategy at the plant.

After three years on the job, guards are paid less than the custodians who work at the plant.

Statement by Guard K.
Approved August 29, 2002

In the late 1990s the plant passed an OSRE test and almost immediately, the utility turned the guard force over to a subcontractor. They have not been tested since. The subcontractor reduced the guard force size. While working for the utility, there were over 60 guards. When they were subcontracted out, they were reduced to less than 50.

Once they became a subcontractor they significantly cut the guards' pay. Another plant owned by the same utility has not even given the guards cost of living increases since 1998.

There is about a 30% turnover rate per contract period – approximately 3½ years. At another plant owned by the same utility, the turnover rate was over 100% and over 90% of the guard force has only one year of experience. At still another plant owned by the utility, there is a 40-50% turnover rate.

Only a small percentage of the guards have military or law enforcement backgrounds. The guards include a former cocktail waitress and a supermarket checkout boy. Prior to being turned over to the subcontractor, the force was better qualified – with more guard force experience. They had only 4-5 guards with less than 5 years experience, and most of the rest had 10-25 years experience.

They only receive about 40 hours of training before going on shift. There is an annual firearm qualification, and no practice is required during the year. They can practice on their own time, and without pay, but it is difficult to schedule time at the range.

They have handguns, shotguns and semi-automatic M-16s.

After 9/11 there were articles about increased guard forces at the site, but there was no increase. They simply required guards to work 6 12 hour shifts every week. For a while, there were two utility police on the perimeter for visibility, but they were not equipped with rifles.

Morale is bad. Maybe 50% of the guard force would leave if faced with an attack.

For the OSRE test, the adversary force was made up of guards from other plants owned by the same utility and guards from their own guard force.

They only guard against three attackers coming into the facility from one entry point. He believes the guards could never protect the plant against attackers coming from more than one entry point.
They never carried their rifles or semi-automatic weapons until last week. Most weapons are still carried in sealed bags that require a knife to open. Some still have their rifles stored in lockers with padlocks.

Their mobile guards have their guns out of the bags. The guard force recently went to night sites on their M-16s. To train and qualify, they were only given 10 rounds to get used to these new

sites. He believed it would take more like 40 hours to get used to these sites. His accuracy was significantly reduced with the use of this new equipment.

They have been told to expect outside help from first responders. What they expect if they are attacked at night, is two local law enforcement officers and one utility officer. They have never performance tested how this would work.

Some local cops have walked through the plant, but the target sets were not explained to them. Guard forces do not take weapons home. If called in a crisis, they come to the plant unarmed, but they are told someone will get weapons to them. Most of the guards live 30 minutes to an hour away from the plant.

For truck bombs, they put up some jersey barriers.

NEI claims the guards are paid the equivalent of GS-9, but that is approximately a $42,000 salary, while the guards' salaries top out, in fact, at about half that amount.

Statement by Guard L.
Approved September 6, 2002

He is a former police officer who works for Wackenhut.

They are on 12-hour shifts, five to six days a week. Recently, a guard fell asleep driving home from the plant after a 12 hour shift. Fatigue and alertness are a real problem. Around guns, this is an additional problem. They have complained to the utility management, the NRC, Wackenhut and OSHA about the fatigue problem, but no one has done anything. If a guard claims he is unfit for duty because of fatigue, he is either sent to a psychiatrist or threatened with it. Some guards have an hour and a half to two hour drives home after these 12 hour shifts.

When they complain to the NRC about various issues, the complaints always just come back to the company Employee Concern program, and nothing happens. "We put no trust in the NRC. They are fooling the public that they are independent from industry."

"Morale – forget about it." The guard turnover is over 50% a year.

They have no rounds in the chambers of their guns. They never practice diversions or multiple entry points.

Recently, they went from shotguns to AR-15s.

They only shoot their guns during annual qualifications. Some want to shoot more, but the company will not pay for the ammunition. They are concerned they will run out of ammunition during a battle. Many guards are lousy shots.

"I've shot at people and been shot at as a cop." He is concerned about the reaction of the other guards during an attack. "Keep in mind targets don't shoot back."

"With the current DBT, single entry, limited terrorist weapons, and the guards are awake, we might be able to win. In a real attack, if the terrorists use snipers, grenade launchers and automatic weapons, we wouldn't have a chance. Even if they only used more than the current DBT of terrorists we couldn't win."

"The plant perimeter is near a woods, where a sniper could take the guards out, and we wouldn't know what is going on."

About 50% of the guard force has military and law enforcement experience.

Because the guard force feels the management of the utility and Wackenhut do not care about the guards, many in the guard force would leave in an attack. The guards are really worried that if they are in a significant gun fight, they will run out of ammunition.

He is concerned about being taken out by snipers while the guards are in their bullet-resistant guard shacks.

They complained to management about these issues, but they are told “We are in compliance with NRC.”

Deadly force is a problem. There’s no training on it, and generally they are told just to “observe and report.”

They have never been performance tested with outside responders. The plant strategy is “containment”– which means keeping the terrorists inside the plant while waiting for outside help for up to two or three hours. He believes it would take that long for a SWAT team to arrive. The plan is once a SWAT team gets there, they would need to do a “tabletop” exercise first in order to form their attack plan to retake the facility.

Statement by Guard M.
Approved September 9, 2002

He agrees with Guard L's statement and adds:

"Morale has gone to hell." They are on 12-hour shifts 5-6 days a week.

They lost their training department. 20-25 guards are applying for jobs at Customs and airport security.

He has complained weekly to the onsite NRC representative about the force being fatigued and under-manned, but gets no response.

He even met with management of the utility. They tell him "We are in compliance. We are a profit-making company that produces electricity."

There is a huge turnover rate. 60-70% of the guard force has under one year of experience.

He believes 50% of the guard force would take off in a terrorist attack.

They ramped up significantly for their OSRE test, and then let guards go.

They are building 25 foot guard towers, which are death traps because they would be vulnerable to sniper rifles. When he complains to management, he is told "Sniper rifles are not in the rules."

There is a new class of guards being trained. At the end of the training they get a $500 bonus. He has been told by 70% of the trainees, they are planning to leave once they get their bonus. This is because once they spent a day on the job training and saw the actual conditions they would be working under, they don't want the job. "They simply can't keep guards."

They only shoot at annual requalification. They get about 2-3 hours of actual shooting a year.

He believes they would be seriously out-gunned in an attack.

Statement of Guard N.
March 29, 2002

I am writing this letter to focus your attention on serious problems with the security in the nuclear industry. I have no political agenda and take no position in the debate over nuclear power. My only concern is for the safety and protection of Seabrook nuclear power plant and power plants throughout the country.

On November 13, 2001, I was hired by Burns International Staffing Services, a security company subcontracted by North Atlantic Power Company (owner of Seabrook nuclear power station). I was hired as an armed security officer to work at the Seabrook station. During the interview for this position, I was told that as a security officer I would become part of a tactically proficient, well-trained security team. This seemed to me liked a great opportunity to excel in the security field and receive training that could be applied to other careers. I was also informed that since the security force was on heightened alert it was working a lot of overtime (12 hour shifts, 5 to 6 days a week) and that we (me and 14 others) were hired to alleviate that. When we were done training everyone would be going back to 8 hour shifts with some overtime between 40-48 hours a week.

The first two days of training was just a basic introduction to the plant. On day three it became clear that the training department was not prepared for a class of this size and things became disorganized. It stayed that way throughout the training process. In the weeks to come, the class would progress through RAD worker training and an array of computer based training regarding safety with all the assorted hazards one might encounter in the work environment. Classroom courses included Communication, Incident Report, Barrier Inspection, Use of Force, Public Relations, Contraband Detection Equipment, Patrol Techniques, Entry Control Procedures, Personnel Search, Vehicle Access, Security Cordon, Alarm Assessment, Response to Bomb Threat, and Search for Missing Officer. Near the end of all these classes, we went out to the range for pistol training and qualifications.

For pistol training, we had three instructors and a class of 16. Over the course of two days I shot 96 rounds through my weapon before I was told that it was time for me to qualify. I informed the instructor that I did not feel comfortable with my weapon. I pleaded with the instructor to let me have more time with this firearm. He tried to comfort me telling me not to worry – that I would qualify. I explained to him that I was not worried about qualifying; I was worried with the fact that this was a strange weapon to me and I was not used to it yet and that my life and the life of other officers, not to mention the public's safety, depends on it. Firing 96 rounds does not make an individual proficient with this weapon. He agreed with me and said he wished he had more time to give me but I had to qualify now, there was no more time. I had one more day of range training for the shotgun.

In the final week, we began tactical training – the most important part of training. We were allotted four days to go over tactical mind set, survival response, tactical communication, basic individual tactics, response force deployment tactics, team tactics, close quarters techniques, tactical weapons techniques, and an introduction to tactical team movement. Here we were going to learn the skills that would prepare us for an attack on the facility. There was one trainer

assigned for this task. Three security officers who had previously missed this part of the training were added to the class. By chance, two of them had prior military background but no trainer certification. These two officers were asked to assist in the training even though they themselves had not gone though the plant's tactical class. I feel that this resulted in a lot of inconsistencies in the training. We had three individuals teaching three different points of view on tactics that they learned in three different fields.

On the last day of tactics training we were to demonstrate our ability to implement what we were taught. The class was split into two teams, many of my teammates failed repeatedly trying to demonstrate the things we had learned. The other team was completely neutralized in the first two minutes of their exercise, which was the only opportunity they had to demonstrate what they learned. Both teams suffered multiple mistakes basically because of our inability to apply what we had learned. This was brought to the attention of the instructor and the response was, it was ok, they were just trying to give us the basics. That was the end of tactical training.

I would encourage you to ask any law enforcement, SWAT team, or military Special Forces if they feel that this level of training over four days would make them proficient enough with their weapons and techniques to engage multiple well-trained, dedicated, armed adversaries (as outlined by the NRC in its DBT). I would venture to guess that those organizations would agree that this training would be insufficient.

The next phase of training was on-the-job training (OJT). Basically OJT is for the students to physically do what they were taught in the classroom, demonstrating the ability to do the job. The majority of OJT was spent learning all the door numbers and locations. This took about two weeks to complete. Now mind you that at this point, the class had gone through weeks of classroom training, three days of fire arms training, and four days of tactical training, but had yet to actually see the inside of the plant or even had the plant's tactical plan explained to them. Two days before we were to be put on shift, the tactical trainer explained the tactical plan for the plant. We spent one day going over the plan on a tabletop blueprint of the plant and the other day we walked around to see all the response points that we would be required to get to in the event of a contingency. To spend eight hours playing tabletop games and about four hours walking around looking at the response points does not give an individual enough time to fully understand and grasp his or her responsibilities. Once again this was brought to the instructor's attention. He said that when we got to shift we would do drills based on the DBT so we would fully understand the tactical plan. So basically they were setting the whole new class of 15 individuals on security post knowing that we didn't have the ability to protect the facility, with the hope that the plant wouldn't be attacked before they could run enough drills to teach us the tactical plan. One of the problems with this (this is just one of many) is that the shift you're on will effect the number of drills you will be involved in. Day shift can only drill on weekends and night shift on Wednesday and Thursday. Night shift has more drill time because there are less people in the plant, but day shift hardly ever sees any drills.

Now in the final phase of OJT, they required us to sign off on all our training. When you sign off you're saying you know how to do all the tasks that will be required of you in the field. But how can you sign off saying you know how to do something in the field when you have never been in the field to do it? But they won't let you in the field to learn it until you sign off on it. This whole

process seems to be designed to take all liability from the company and put it on the security officers. This is the first of many hard decisions I had to make. It did not sit well with me that I had to sign off on training that I felt was far below adequate. I could either sign off or resign. I did not want to resign, so I signed off and hoped nothing went wrong on shift.

My first night on shift was uneventful. I met some of the other officers but mostly I just felt my way around, getting my feet wet so to speak. Night two was when we started the drills; this would be the first set of drills at the plant in more than six months. This was my first chance to see how the tactical plan was going to work, for me to implement everything I had been taught. For these drills, you are given a whistle and you use your flashlight. The whistle represents the gunshot and the flashlight the bullet. They told us what time the drill would start so we would be ready. We had three drills that night though the first two I only heard over the radio because the drill was in a different part of the plant. They killed multiple officers and blew up a number of vital components, and in at least one of the drills, they got a complete target set which would have resulted in a melt down.

On the third drill they came at my post. I was posted in the radiological controlled area (RCA). They came in through a door that only requires a crowbar to open it. There were only two attackers and they were upon us in under a minute and easily killed me and another officer with grenades. The room we were guarding was one of the two ways into the reactor itself. Once we were dead they had a clear path into the reactor – the plant would've melted down again. And while doing all this, the adversaries did not lose a single guy. This was an eye opener for me; I was highly alarmed by the results of the drills. The next night we had three more drills. I was posted outside with two other officers who had worked there for more than a year. The first drill started on the other side of the plant and finished in my area. The adversaries in this drill had hit all the target sets they needed and still had one person alive so once again the plant was melted down. The next two drills had about the same results – all three of us died outside and they melted down the plant.

So over the last two nights we had six drills and the drill team had succeeded in having some sort of radiological release in nearly every drill. I was very concerned with this and started talking to all my superiors about the obvious problem. The response that I got from them was that this was the reason behind all the drills, to make the officers better at their tactics. I pointed out that we just lost six drills over two nights which included officers that had been there for years. I thought that we were suppose to be a team working together but that was not team work out there; that was chaos. There were officers that did not get to their response points. We had officers that did not even know where their response points were and, if that was not bad enough, we had officers shooting other officers by mistake. If we were to be attacked right now we would fail – the whole shift had just demonstrated that. That's why we need to do more drills, was the only response I received.

These six drills were the only drills I had at Seabrook nuclear station. Over the next few weeks I talked to officers, superiors, anyone who would listen, about the problems of the plant. Talking with all these people, I started to see something more alarming then everything else – over the whole guard force there was an attitude of complacency. Everyone saw the problems, some had tried to solve them, but basically no one knew what to do. Some of the officers believe that most

of the posts are basically suicide because every time they have a drill, they are killed in those posts. These same officers said that if the plant is attacked they are going to use their weapons to get off the plant. Then there are some who would stay and fight but who feel that training is inadequate and don't quite understand what they are suppose to do in the event of an attack, and other individuals who just feel that the plant will never be attacked.
I had talked to everyone that I could. I went through the chain of command in management and got no results. They either can't or won't change anything. Once again I faced a hard choice: Do I stay and try to change things from within, or do I resign? Resigning would not solve the problems and wouldn't help me sleep any better at night. This job was supposed to be a career for me; I was going to be a highly trained, highly paid individual. I wanted to take the experience I would receive and apply it to something better further down the road. On top of that, this plant is in my backyard so what happens here is going to effect me whether I work there or not. So by working there, I thought I could help control what happened to my family, friends, and home. Every night that I went to work I looked at the officers on post with me to determine what I would do in the event of an attack. Some nights I felt very confident about our chances of stopping it. Other nights, I too would use my weapons to get off the plant. And sometimes I just plain feared for my life, praying that we wouldn't be attacked. Many nights went by like this when I realized that I too had developed that same level of complacency that I had found so alarming weeks before. I was saying the same things those officers were saying – I too was willing to run if there was an attack. With that attitude, I was no longer helping; I had become part of the problem. This realization ultimately forced me to resign.

As I mentioned before, Seabrook power plant is in my backyard. Regardless of whether I work there, I am affected by its presence like thousands of Americans throughout the country who live near power plants. Since my resignation, I have decided to publicize my story in the hope that it will inspire reform to the system. I am anxious to work with any policy maker or journalist who shares my concern for the safety of the American public.

Sincerely,
John Middlemiss

Statement of Guard O.
March 29, 2002

I am writing this letter to inform you and the public of a serious problem in our country today regarding the security at nuclear power plants.

On November 13, 2001, I joined a class of 15 employees under contract with Burns Security to commence training and gain a position as a armed security guard at Seabrook Nuclear Power Station in Seabrook, NH. When I went for my interview for employment I was led to believe by gaining employment in this position, I would become part of a well-trained, tacitly proficient Tactical Response Team. This seemed like a great opportunity to excel in an up-and-coming field given the current events.

I was told that given the current state of heightened alert of the nation the guards at Seabrook Station had been working a lot of overtime. We were being hired to help with that situation.

We started classes on a hectic schedule where it seemed to me and the majority of the class that it was sort of a fly by the seat of your pants operation. When asked about it, the training staff apologized and stated they were not prepared for a class of this size and to please bear with them through the duration. We progressed through a variety of training including classroom courses covering several topics and weapons qualification. Needless to say, the two days they had allotted for weapons qualification was not nearly enough time and was extended for individuals who could not qualify in that amount of time. I qualified on the second day of range training and that was the extent of my firearms training on the pistol. We were given one more day for shot guns and that was it.

I made it known to the trainers that I was not comfortable with the gun and did not believe that I was proficient enough with the gun to be able to engage multiple adversaries on the move with much success. This is doubly concerning because though I was uncomfortable with the weapon, I still achieved the highest qualification score in the class. The response of the training staff was that they would like to give us more training but couldn't because of time constraints. I was informed that we would not be firing our service weapons again until the annual qualifications. When I asked how I was to remain proficient with the firearm, I was told that I could go out on my own time and dime to do so if I felt the need. It is my opinion that individuals expected to defend a nuclear power plant should be required to be proficient with their weapons, and it is the responsibility of the security company, not the guards, to make sure that is the case. To do otherwise is irresponsible and certainly not in the best interest of the general public.

Then finally in the last weeks of our six week training regiment we started tactical training. The first thing our trainer said to us regarding tactical training was that he wished that he could spend six weeks with us but that the company would only allot four days towards that application. To me, this was the most important part of the training we could receive. In these four days, the fifteen of us were to learn the tactics necessary to defend the plant and our lives in the event of an attack. There was one trainer for this task and he asked two of the plant guards with previous military background, but no trainer certification, to help in the instruction. Those guards, at the time, had worked at the plant for less than six months and had not gone through the plant's

tactical class themselves. We received some basic training and were divided into two groups to demonstrate that we had mastered those basics. The team of eight that I was on had one attempt to demonstrate what we had learned. In that attempt, our team was neutralized entirely in the first two minutes of the exercise due to a lack of cohesion and because many of the basics we had been taught were not applied. This showed me that our team was not proficient with tactics and did not retain the instruction.

I brought my opinion up to the instructor and was told that it was alright because he was just trying to give us the bare essentials and that when we got on shift we would do more realistic tactical training. It seems to me that it is crucial that the active guards protecting the power plant be fully trained before they get there. In one month we had drills only one day, which I did not take part in. The additional training I was promised was nowhere in sight.

As time progressed, I became more and more aware of an unprecedented level of disatisfaction among the guard force. As I talked to more guards and became acquainted with them, I began to realize their dissatisfaction was well founded: they had been working 60-72 hours a week for a long period of time, they had their Christmas bonuses taken from them, they were using what some of them called antiquated weapons, and they had received no recognition for their efforts.

At the same time, North Atlantic bought a number of new weapons though they couldn't be used because there was no time to train the guards who were already working so much overtime. When I asked the security manager of North Atlantic when we would have time to qualify with the new guns he told me not until after the shutdown, probably around June. I asked what he was doing to alleviate the overtime problem and was told that the chief was hiring more guards. But the chief told me he was hiring only two more guards to replace two guards who had left the plant. When I pointed out that this would not help the overtime problem, he seemed unconcerned. He went on to tell me that the security department had several other priorities that needed to be addressed first.

After showing my dissatisfaction, I was told that the job isn't for everyone and what I did was up to me. I told them that if I did not get some assurance that they would try and resolve some of the problems (disgruntled armed guards, unsecured and ineffective barriers, and inadequate training, to name a few) that I was going to resign for fear of my own safety. I was told by the security manager that he would pass it along to his superiors because he himself did not have the authority to do anything about it. I asked him if he saw any resolutions happening in the near future. The response was these things take time. I told him that my position was that given current events and the almost weekly advisories from the intelligence community regarding threats to nuclear power plants, it is our responsibility to do what we can to enhance security beyond what is required in the interest of the safety and security of the American people. I got the feeling that I was getting nowhere in the conversation and felt that the security manager was not really concerned about the issues that I had brought to his attention. For the most part, he shifted blame for his lack of action to those around him. It was at that point I decided to terminate my employment for said reasons.

Now I am currently unemployed and collaborating with another ex-Seabrook armed guard to try to make people and government aware of the extent of the problem at hand. The government

should impose more stringent oversight of the NRC and push them to upgrade their security requirements and military strategists should independently evaluate plant security. Furthermore, I believe the National Guard should temporary be brought on site to support the current guard force until the NRC and individual plants can improve security. Essentially what it boils down to is that nothing will change without more stringent requirements and oversight. We need to be proactive in these times where our enemies have brought war to our soil. We can't afford to wait and see. Every American citizen has an obligation to stand up to the challenge and make this country safe or as safe as we can regardless of the financial cost.

Sincerely,
James Howard

Statement of Guard P.

He is a former military MP and police officer. He has "shot people and been shot at." He has been on the guard force for over eight years.

He has relayed his concerns about security problems, as well as fatigue issues through the chain of command – Wackenhut and utility management. No action was taken. He has not gone to the NRC yet.

The guard turnover rate is high. 70% of the guard force has less than two years experience, 50% has less than one year.

Until very recently, they only had hand guns and shotguns with 19 rounds, and they did not carry their shotguns. They just received AR-15s.

One of his major concerns are the Bullet Resistant Enclosures (BREs). Outside, they are elevated. He believes they are death traps. They cost about $50,000 a piece. He believes 50 caliber API rounds or RPGs would take them out.

The guards believe the terrorists will come with automatic weapons, sniper rifles, grenades and RPGs etc. The guards would be seriously outgunned, and will not have a chance. The BRE's inside are wedge shaped. He believes a grenade would blow them off their anchors, and on top of the guard.

In the response scenarios, guards depend on outside responders – which will take about 2 hours to respond. This has never been tested though.

He has a major concern about running out of ammunition.

During an outage, a properly cleared worker uses his badge to allow several uncleared workers with visitors badges to "piggy-back" on his badge.

NRC does compliance inspections from time-to-time. "But compliance doesn't mean you can stop a terrorist."

Prior to 9/11, from time-to-time the utility would conduct training exercises using 4-5 terrorists from two entry points. Since 9/11, however, now they are only using three terrorists from one entry point. He can not get an answer why they have downgraded the training.

They only shoot their weapons during annual requalification, about 2-3 hours per year. They have a number of guards currently that can not qualify, including a supervisor. "The utility is only concerned about the bottom line." They have spent millions on equipment – but it was the wrong equipment, like the BREs.

They run their exercises with rubber guns and whistles.

Statement Q.
by National Guardsman Called Up to Protect Nuclear Power Plant
Approved September 7, 2002

He was assigned to perimeter security at a nuclear power plant since 9/11. He is a supervisor in his National Guard unit with Special Operations training.

He believes it would take a terrorist 45 to 60 seconds to get into a spent fuel pool.

He is concerned that he can see all of the bullet-resistant guard shacks on two sides of the plant from his vantage outside the perimeter fence. He claims he could kill every guard on two sides of the plant from outside the fence line with a 50 caliber sniper rifle with API rounds. He has raised this concern with power plant security, and they recognize the problem, but have not done anything about it.

He believes the National Guardsmen are "sitting ducks in the face of a sophisticated terrorist attack" the way they are currently deployed even though their guns are loaded.

The utility has not briefed his unit on the location of the target sets needed to be protected, claiming they do not have a need to know.