



# Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

August 7, 2002

Mr. John A. Zwolinski, Director  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Mr. Zwolinski:

Mr. Norm Cohen of The UNPLUG SALEM Campaign asked me to review your letter dated May 16, 2002, which transmitted the proposed Director's Decision for the 2.206 petition submitted September 17, 2001. Mr. Cohen sought via his petition a number of measures to upgrade safety and security at the Salem, Hope Creek, and Oyster Creek nuclear power plants in New Jersey. Mr. Cohen additionally asked me to provide my comments directly to you because of the impending deadline for comments on the proposed Director's Decision.

First, I frankly do not understand why Mr. Samuel J. Collins rather than Mr. Roy P. Zimmerman is the director making the decision in this matter. Your letter transmitting the proposed Director's Decision is dated May 16, 2002, or nearly six weeks after the Nuclear Regulatory Commission created the Office of Nuclear Security and Incident Response (NSIR) on April 7, 2002. Mr. Collins is the Director of the Office of Nuclear Reactor Regulation (NRR). When Mr. Cohen submitted his petition in September 2001, NRR had responsibility for nuclear plant security. Mr. Glenn M. Tracy and his staff within NRR handled this responsibility. But Mr. Tracy and the majority of his staff moved to NSIR when the NRC reconfigured how it handles nuclear plant security. According to the NRC's website, NSIR:

*Develops overall agency policy and provides management direction for evaluation and assessment of technical issues involving security at nuclear facilities, and is the agency safeguards and security interface with the Office of Homeland Security, the intelligence and law enforcement communities, Department of Energy (DOE), and other agencies. Develops and directs the NRC program for response to incidents, and is the agency incident response interface with the Federal Emergency Management Agency (FEMA) and other Federal agencies.*

Thus, the Director of the Office of Nuclear Security and Incident Response, not the Director of the Office of Nuclear Reactor Regulation, should be the one to decline Mr. Cohen's security petition. Mr. Collins's "no" vote on this petition is as irrelevant as my "yes" vote.

Moving to comments on specific portions of the proposed Director's Decision, pages 6 and 7 discuss the physical protection requirements of 10 CFR 73.55. Missing from this discussion are the following pertinent facts:

- Since the NRC began checking physical protection capability with force-on-force tests in 1991, more than 300 force-on-force exercises have been conducted by the NRC at US nuclear power plants. None, repeat NONE, of these exercises has targeted spent fuel, whether in wet-pool storage or in dry casks. All of the exercises targeted the irradiated fuel in the reactor.

Consequently, the capability of all the required physical protection features to adequately defend against sabotage of spent fuel has never been demonstrated. This is relevant because Mr. Cohen's petition specifically sought to compensate for this shortcoming.

- The second bullet on page 7 implies that the screening of personnel and vehicle prior to permitting access to the protected area of a nuclear plant is sufficient to prevent explosives and incendiaries within the facility. Not true. There are plenty of such materials readily available within the facility. For example, on January 7, 1989, workers at the HB Robinson nuclear power plant in South Carolina responded to a number of small fires. It turns out that the fires were caused by workers accidentally connecting the hydrogen supply system to the plant's instrument and service air systems. These systems carried hydrogen gas throughout the plant, causing flammable concentrations in the turbine building, auxiliary building, and reactor containment structure.<sup>1</sup> This is relevant because an insider or small band of outsiders could intentionally do what workers accidentally did at Robinson, and provide ignition sources once the hydrogen concentrations reached flammable mixtures.
- The third bullet on page 7 implies that background checks and other measures to control which workers access which parts of nuclear power plants are sufficient to prevent insider sabotage. Not true. The Central Intelligence Agency and the Federal Bureau of Investigation had even more extensive measures, including periodic polygraphing of personnel, yet these federal agencies were unable to prevent Aldrich Ames and Robert Hansen from compromising national security from the inside. The NRC does not polygraph nuclear plant workers and therefore cannot pretend to have more effective protection than agencies that do. This is relevant because Mr. Cohen's petition specifically sought to provide additional barriers that insiders would have to defeat before the public would be harmed.
- The last bullet on page 6 and the first seven bullets on page 7 cover various requirements for nuclear plant security – all of which are under the purview of the NRC's Office of Nuclear Security and Incident Response and NOT the NRC's Office of Nuclear Reactor Regulation. This is relevant because the wrong Director is attempting to decline Mr. Cohen's petition.

The first paragraph on page 18 provides the NRC's judgment, based in large part of the absence of "specific credible threats against any NRC-licensed facility since September 11, 2001," that "the probability of terrorists using a large airliner to successfully damage a nuclear power plant remains acceptability low." UCS questions the NRC's judgment on two points. First, the Bush administration repeatedly stated that there were no specific credible threats against the World Trade Center or the Pentagon prior to September 11, 2001. The lack of "specific credible threats" therefore may be true, but it's hardly relevant. Second, the NRC concedes that US nuclear power plants were not specifically designed to withstand aircraft crashes. From 1980 to 1983, I worked at the Browns Ferry Nuclear Plant in Alabama. In 1975, a worker checking for air leaks with a candle in the room beneath the control room accidentally started a fire that burned out of control for nearly six hours, disabling virtually all of the emergency core cooling systems on Unit 1 and many of those systems on Unit 2. While many fire protection upgrades have been made since the Browns Ferry fire, the NRC staff seems to have discounted the potential for a large aircraft laden with jet fuel to do more damage to defense-in-depth than one worker with one candle. This is relevant because Mr. Cohen's petition sought to address these shortcomings pro-actively, whereas the NRC's position would wait until after a plant was attacked and then "close the barn door."

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<sup>1</sup> Nuclear Regulatory Commission, Preliminary Notification PNO-II-89-04, "Flammable Mixture of Hydrogen in H.B. Robinson's Station Air System," January 9, 1989.

The last paragraph on page 19 provides the NRC's dismissal of Mr. Cohen's concerns about fires in multiple rooms. The NRC relies in part on access screening, which is insufficient because of the HB Robinson hydrogen near-miss described earlier. The NRC additionally relies on the saboteurs being unable to prevent "these fire mitigation systems, fire brigade personnel, and plant operators from responding to and/or extinguishing the fires in a timely manner." There are numerous flaws in this NRC position, including:

- Ten years ago this month, Hurricane Andrew inflicted considerable damage on the Turkey Point nuclear plant in southern Florida. The plant's fire protection system was severely damaged when a tower collapsed onto the primary storage tank (500,000 gallons) and the secondary storage tank (750,000 gallons). The plant's fire sprinkler system did not have water to use in event of fire until workers jury-rigged a temporary line to the screen-wash pump. The two tanks were located side by side outside the plant – convenient for destruction by saboteurs.
- Five years ago, oil used to cool the main transformer at the Pilgrim nuclear plant in Massachusetts flowed into the reactor building through a bus duct and pooled on the floor of the switchgear rooms. While this flammable oil did not catch fire, the NRC determined that Pilgrim faced a total loss of AC and DC power (i.e., worse than station blackout) had it ignited. The fire hazards analyses are based on installed combustibility loadings – saboteurs can significantly alter those loadings.
- Attacks on nuclear plants may directly or indirectly impair the capability of the plant's fire brigade. For example, an aircraft crashing into the facility is obviously hazardous to personnel. A ground attack could also be detrimental to plant workers considering they are not bullet-proof. Even if fire brigade members survive the initial assault, their freedom to move about the facility to fight the fire could be slowed.

Thus, it is rather cavalier for the NRC to dismiss Mr. Cohen's security concerns without specifically addressing his concerns for the potential scenarios.

Pages 27 to 30 contain the NRC's response to Mr. Cohen's petition calling for increased force-on-force testing by the NRC. Missing from the NRC's response is this fact – on September 10, 2001, the NRC had plans for fourteen (14) force-on-force security tests at US nuclear power plants during Fiscal Year 2002, six Operational Safeguards Readiness Evaluations (OSREs) by NRC and eight Safeguards Performance Assessments (SPAs) by licensees. No force-on-force security test has been conducted since September 11, 2001. Thus, a measure thought prudent when America was at peace was discarded by NRC now that America has declared war on terrorism (and vice-versa). Rather than show off its mathematical prowess (page 28), the NRC should conduct force-on-force tests as requested by Mr. Cohen.

On page 28, the NRC describes the rigor of its currently-abandoned force-on-force security tests and states "The NRC staff is not aware of any comparable performance testing of security measures for any other type of commercial industrial facilities." So what? Is the NRC staff aware of any other type of commercial industrial facilities that are so hazardous that they require federal liability protection, as the nuclear industry does under the Price-Anderson Act? If so, than the disparity in security testing rigor would be relevant. If not, the point is pointless. The NRC talks a lot about providing protection commensurate with the risk. The fact that nuclear power plants are the most hazardous commercial industrial facilities in the US of A clearly warrant their getting more than K-Mart security protection.

In conclusion, as an absolute minimum, the NRC should have Mr. Roy Zimmerman issue the Final Director's Decision in this 2.206 petition. He is the Director of the appropriate office, not Mr. Collins.

Sincerely,

David Lochbaum  
Nuclear Safety Engineer  
Washington Office