

probability that an initiating event occurs during the brief period of the impairment. The petitioners state that initiating events like pipe breaks, earthquakes, etc. are low probability events assumed to occur randomly such that the chances of the initiating event happening during any short time period are a mere fraction of an already small number.

The petitioners state further that the same impairment, judged from a radiological sabotage perspective, may be unacceptable because the initiating event for sabotage is not random. According to the petitioners, saboteurs can cause actions to happen precisely at the time of the impairment. Thus, the chances of an initiating event occurring, instead of being reduced to a mere fraction of a small number, increase towards 100 percent. The petitioners state that the NRC's design basis threat is supposed to consider both an act of malice perpetrated by an insider acting alone and an act by an insider aided by several outsiders. The petitioners believe that, as long as one or more insiders remain part of the design basis threat, it is reasonable to assume that sabotage will be timed to coincide with the plant configuration being most, or at least more, vulnerable.

Therefore, the petitioners believe it is imperative to evaluate proposed changes, tests, and experiments from both a safety and a security perspective. They note that a security perspective will not necessarily prevent proposed actions from being performed; but in the case of short-term or temporary applications, the security perspective review might flag a heightened vulnerability to radiological sabotage but accept it based on having compensatory measures put in place. The petitioners offer that compensatory measures might entail posting armed guards around the in-service safety widget while the redundant safety widget is removed from service for extended maintenance.

The petitioners believe without the regulatory change sought by this petition to integrate the safety evaluations performed under 10 CFR 50.59 with the security evaluation performed under 10 CFR 50.54(p), changes, tests, and experiments may continue to occur at U.S. nuclear power plants with proper consideration of safety implications, but with insufficient consideration of their security implications. The petitioners believe the regulatory changes sought by this petition would not necessarily prevent the changes, tests, and experiments from happening. The petitioners assert the requested

regulatory changes would, in all likelihood—

- (1) Allow many changes, tests, and experiments to proceed as planned;
- (2) Require some changes, tests, and experiments to proceed with compensatory measures in place to offset the radiological sabotage risk;
- (3) Require very few changes, tests, and experiments to be approved by the NRC because they decrease the effectiveness of physical protection equipment and/or procedures; and
- (4) Prevent a very small number of changes, tests, and experiments on the grounds of undue risk from radiological sabotage.

Aerial Hazards

The petitioners state that none of the 103 nuclear power plants operating in the United States at the time were designed to withstand suicide attacks from the air as we tragically experienced on September 11, 2001. This vulnerability prompted the Federal Aviation Agency (FAA) to establish no-fly zones around nuclear plants in the Fall of 2001. The petitioners assert this response was largely symbolic since FAA sanctions would probably not deter a suicide bomber, but it marked an implicit concession by the Federal Government that nuclear plants were vulnerable to air assault. The petitioners state further that nuclear plant owners would like the public to believe their facilities are hardened structures virtually immune to attack from the air due to the thick reinforced concrete walls of plant structures.¹

Petitioners do not agree with this rationale, asserting that the thick reinforced walls do not surround all vital parts of a nuclear power plant. They note that one study of aircraft hazards, jointly prepared by the owners of two similar nuclear power plants more than 20 years ago, concluded "The control building is the only single building which, if hit, could lead to core melt."² The petitioners state the control buildings at every nuclear plant in the U.S. are located outside the robust structures described by the industry, and therefore offers that the nuclear industry's proclamations about the robustness of thick, reinforced walls may be accurate, but they fail to tell the entire story. The petitioners state that

¹ NEI Report dated December 2002, "Deterring Terrorism: Aircraft Crash Impact Analyses Demonstrated Nuclear Power Plant's Structural Strength."

² Report from Spring 1982 by the Power Authority of the State of New York and the Consolidated Edison Company of New York, "Indian Point Probabilistic Safety Study," Section 7.6.2, "Aircraft Hazards Analysis."

the incompleteness of industry's position is further evidenced by the fire hazards analyses required by NRC's regulations. The petitioners state that NRC did not restrict the scope of the fire hazards analyses to only those areas within the reactor containment structure, but that the regulations recognize the reality that reactor core damage can result from fires outside the reactor containment structure. The petitioners state that security tests conducted since 1991 under the NRC's Operational Safeguards Readiness Evaluation (OSRE) program also detail why the nuclear industry's current assurances are incomplete. Each OSRE, according to the petitioners involved force-on-force exercises with a small group of mock intruders going up against the facility's armed responders. The petitioners included the following quote from the testimony presented to Congress last year by the NRC individual responsible for the OSRE program.

Eighty-one OSREs have been conducted to date. At 37 of them, the expert NRC team identified a significant weakness; significant being defined as the adversary team simulating sabotaging a target set, which would lead to core damage and in many cases, to a probable radioactive release.³

The petitioners state that the "target set," attacked and defended by the adversary team and the security force respectively during the force-on-force exercises is defined by the NRC as follows:

A target set is a minimum combination of equipment or operator actions which, if prevented from performing its intended safety function or prevented from being accomplished, would result in core damage.⁴

The petitioners state that target sets vary from plant to plant and generally involve more than a single pump, a single valve, or a single wall (however thick and reinforced). The petitioners note that the Nuclear Energy Institute (NEI) issued guidance to assist plant owners in developing their target sets.

³ Testimony on April 11, 2002, by David N. Orrick, Reactor Security Specialist, Office of Nuclear Security and Incident Response, Nuclear Regulatory Commission, before the U.S. House Subcommittee on Oversight and Investigations, "A Review of Enhanced Security Requirements at NRC Licensed Facilities."

⁴ NRC memo dated November 17, 2000, from Glenn M. Tracy, Chief, Operator Licensing, Human Factors and Plant Support Branch, to John R. White, Chief, Radiation Safety and Safeguards Branch, Region I; Kenneth P. Barr, Chief, Plant Support Branch, Region II; James R. Creed, Team Leader, Safeguards Staff, Region III; and Gail M. Good, Chief, Plant Support Branch, Region IV, "Conduct, Agenda, and Rules of Engagement for Operational Safeguards Response Evaluations," page 4.