



NUCLEAR CONTROL
INSTITUTE

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February 19, 1993

Commissioner Ivan Selin
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Request to Reopen Petition for Rulemaking and Request for Action

Dear Chairman Selin:

We are writing to you with regard to the recent breach of security at Three Mile Island-1 on February 7, 1993 and to urge that the Commission take appropriate action to upgrade security and evaluate safety systems at nuclear power plants in order to avoid or to mitigate the radiological consequences of more serious incidents in the future.

Concern over the possibility of vehicular intrusions was a major factor prompting the Nuclear Control Institute and the Committee to Bridge the Gap to submit a Petition for Rulemaking on January 11, 1991 (PRM-73-9) (Tab A), seeking an upgrade of the design basis threat for radiological sabotage of nuclear reactors. That petition was denied on June 11, 1991 (56 Fed. Reg. 26782) (Tab B). Continuing to believe that some meaningful action was needed, we subsequently filed a Request for Action pursuant to 10 C.F.R. Section 2.206 on September 4, 1991, supplemented on September 20, 1991, seeking an Individual Plant Examination (IPE) program requiring nuclear power plant licensees to evaluate their plants' ability to withstand safeguards events beyond the design basis (Tab C). On December 31, 1991, that Request also was denied (DD-91-08) (Tab D).

We believe that the TMI intrusion demonstrates (1) the danger of continuing to assume that serious threats---such as those that might be initiated by a well-organized and well-armed group---can be identified in advance and (2) the wisdom of undertaking the upgrade and evaluation initiatives we have requested.

Rather than rely on advance warning, the NRC should seek to prevent future breaches of security at potential targets by increasing protection requirements. These have not been upgraded since the 1970s. We regard as inadequate the current regulations that require protection against no more than three external attackers, on foot, acting as a single team and employing no more than hand-held weapons. At the same time, we stress that attacks by deranged and fanatical individuals can be deadly and can come entirely without warning---as the recent attack at the entrance to CIA headquarters and the 1983 truck bombing of the U.S. Marine barracks in Beirut amply illustrate.

Strategies for stopping the spread and reversing the growth of nuclear arms.

Paul L. Leventhal, *President*, Peter A. Bradford, David Cohen, Victor Gilinsky, Denis A. Hayes, Julian Koenig, Sharon Tanzer, Roger Richter, Dr. Theodine B. Taylor
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Further, rather than assume the adequacy of present safety systems, the NRC should obtain the individual plant examinations needed to determine whether these systems must be upgraded to withstand the explosive force of a successful vehicle-bomb attack without major radiological releases. Because of differences in design, the ability of these systems to withstand such a shock varies from plant to plant. The TMI incident is proof positive that the possibility of vehicular intrusion at nuclear power plants is not merely hypothetical and that the NRC frankly does not know what the consequences would have been had the vehicle that crashed into the plant been laden with explosives. The possibility of vehicular intrusion and the potential consequences of a successful attack must now be dealt with in a vigorous and forthright fashion.

We thus request that the Commission take formal action to reopen proceedings both under the Petition for Rulemaking and the Request for Action cited above and that it reconsider its prior rulings in these matters.

In addition, we urge you to ensure that the Commission conduct a vigorous inquiry into the TMI intrusion. The NRC investigation, as described in the Commission's February 9 press release, omits at least two important questions: (1) What would the consequences have been for the plant if the car that struck it had been a vehicle bomb? (2) Why was the plant not shut down during the incident, given the initial uncertainty as to whether the vehicle contained a bomb and the serious damage the intruder might have caused inside the plant during the four hours before he was apprehended?

The apparent lack of adequate security at nuclear power plants against vehicular intrusion and the potential vulnerability of their safety systems to vehicle bombs must be addressed credibly if you are to ensure public health and safety and to build public confidence in the nuclear power industry. We urge you to respond favorably to our request to reopen the proceedings and reconsider the earlier determinations in these matters. The TMI incident is a wake-up call and provides you an opportunity to act before tragedy strikes.

We would appreciate a prompt response to this request.

Sincerely,



Paul Leventhal
President
Nuclear Control Institute



Daniel Hirsch
President
Committee to Bridge the Gap

Attachments

cc: See next page.

cc: Senator John Glenn
Chairman, Committee on Governmental Affairs

Senator Joseph Lieberman
Chairman, Subcommittee on Nuclear Regulation

Senator John Kerry
Chairman, Subcommittee on Terrorism, Narcotics and International Operations

Representative George Miller
Chairman, Committee on Natural Resources

Representative Richard Lehman
Chairman, Subcommittee on Energy and Mineral Resources

Representative John Dingell
Chairman, Committee on Energy and Commerce

Representative Philip Sharp
Chairman, Subcommittee on Energy and Power

Representative Edward Markey
Chairman, Subcommittee on Telecommunications and Finance

Representative Mike Synar
Chairman, Subcommittee on Environment, Energy and Natural Resources

Vice-President Albert Gore, Jr.

Daniel Poneman
National Security Council

Robert Gallucci
Assistant Secretary of State for Politico-Military Affairs

Ashton Carter
Assistant Secretary of Defense-Designate for Nuclear Security and Counter Proliferation

Edward Fei
Director, Office of Non-Proliferation Policy, Department of Energy

Before the
UNITED STATES NUCLEAR
REGULATORY COMMISSION
Rockville, Maryland 20555



In the Matter of)

PROPOSED AMENDMENTS TO 10 C.F.R.
PART 73 (Upgrading The Design
Basis Threat For Radiological
Sabotage Of Nuclear Reactors))

DOCKET NO. _____

PETITION FOR RULEMAKING
AND REQUEST FOR EMERGENCY ACTION

Pursuant to 5 U.S.C. § 553(e) and 10 C.F.R. § 2.801, the Nuclear Control Institute ("NCI") and the Committee to Bridge the Gap ("CBG") petition the U.S. Nuclear Regulatory Commission (the "Commission") to amend its regulations at 10 C.F.R. § 73.1 to upgrade the "design basis threat" for radiological sabotage of nuclear reactors, that is, to redefine the potential threat against which reactors must be prepared to defend, and to provide concomitant enhanced protective measures of power plant security under 10 C.F.R. Part 73. More specifically, Petitioners seek a revision of the threat assessment to include (a) explosives-laden surface vehicles ("truck and boat bombs")¹ and (b) a larger number of attackers using more sophisticated weapons than presently contemplated.

Current trends in terrorism indicate that the present design basis threat is not realistic. A terrorist attack which

¹There is also a potential threat from an airplane bomb, but the complexities involved in establishing protection against such a threat are such that Petitioners do not seek its inclusion in the threat definition at this time.

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overwhelmed plant defenses could not only wreck a billion dollar facility but also cause the release of radioactivity comparable to that in a severe nuclear accident, causing thousands of fatalities, tens of thousands of latent cancers and genetic effects, and billions of dollars in property damage. Increased threats, however, can be countered by measures which can be implemented for very modest cost but which will protect against events with such potentially catastrophic consequences. The requested action is therefore necessary under the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011, et seq. (the "Act"), to assure the common defense and security and protect the health and safety of the public by deterring attacks on nuclear reactors and reducing their consequences. Petitioners urge the Commission to adopt the requested measures on an expedited basis.

Because of the imminent possibility of war with Iraq and the risk that President Saddam Hussein might be prepared to unleash terrorist attacks against domestic U.S. targets, Petitioners also request the Commission to take immediate action to ensure that existing licensee contingency plans for truck bombs are fully and promptly implemented. All such plans should be operational not later than January 15, 1991. Thereafter, they should promptly be reviewed by the Commission for adequacy and upgraded as necessary.

I. The Interests of Petitioners

NCI is a non-profit corporation, organized and existing under the laws of the District of Columbia, with its principal

place of business at 1000 Connecticut Avenue, N.W., Suite 704, Washington, D.C. 20036. NCI is an independent policy research center that was established in 1981 to monitor nuclear programs in the United States and other countries. It develops strategies for preventing the spread and reversing the growth of nuclear armaments. In particular, it seeks to increase understanding by policymakers and the public of risks associated with introducing into civilian nuclear programs the materials essential to building nuclear weapons. Also, NCI explores approaches to reducing the existing nuclear arsenals that are helpful to prevention of nuclear proliferation and terrorism. In 1985, along with the State University of New York Institute for Studies in International Terrorism, NCI sponsored a multi-disciplinary, internationally-attended Conference on nuclear terrorism and thereafter created an International Task Force on Prevention of Nuclear Terrorism, comprised of 26 experts from nine countries. These initiatives resulted in two books: Leventhal and Alexander, eds., Nuclear Terrorism: Defining the Threat (Pergamon, 1986) (hereinafter "Nuclear Terrorism"), and Leventhal and Alexander, eds., Preventing Nuclear Terrorism (Lexington, 1987) (hereinafter "Preventing Nuclear Terrorism"). Among other matters, the 150 participants in the Conference and the 26 Task Force members identified deficiencies and urged improvement in protections against sabotage at nuclear facilities.

CBG is a non-profit corporation, organized and existing under the laws of the State of California, with its principal

place of business at 1637 Butler Avenue, Suite 203, Los Angeles, California 90025. CBG engages in public policy advocacy and research, and it is particularly concerned with nuclear safety and the threat of nuclear terrorism. As an intervenor in a Commission proceeding (Docket No. 50-142), CBG successfully challenged the relicensing of one reactor based in part on weaknesses in site security. As one result of CBG's efforts to enhance security, barriers to vehicular access were temporarily installed at the site during a period of particular tension. CBG has continued to seek improvements in reactor safety and security, including, in particular, the elimination of unnecessary use of weapons-grade reactor fuel.

Both Petitioners have the strongest interest in seeking to ensure that nuclear facilities are adequately protected against terrorist threats. Because of their prior activities and expertise, they believe that they can be of substantial assistance to the Commission in formulating rules to address such threats.

II. Basis For The Request

A. The Current Regulatory Regime

The Commission's current regulations related to radiological sabotage of nuclear facilities are set forth at 10 C.F.R. Part 73. 10 C.F.R. § 73.1 establishes the "design basis threat" and, as interpreted by the Commission, provides, inter alia, that nuclear reactors need not protect against radiological sabotage attempts by (i) a group or individual using weapons of greater

sophistication than hand-held automatic weapons or explosives, thus excluding attack by explosives-laden vehicles, or (ii) more than three (3) external attackers or attackers capable of operating as more than one team, i.e., capable of employing "effective team maneuvering tactics." 10 C.F.R. § 73.1(a)(1). See generally Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2), CLI-82-19, 16 NRC 53 (1982). 10 C.F.R. § 73.1 was adopted in 1979, prior to terrorist incidents which have demonstrated the ability and willingness of terrorists to mount sophisticated attacks capable of causing substantial physical destruction, in particular through the use of truck bombs. The ongoing Persian Gulf crisis has produced indications that Iraq may seek to generate terrorist incidents in the United States either prior to or in the event of war in the Middle East. See, e.g., Wall Street Journal, August 20, 1990, at 1; New York Times, September 14, 1990, at A10; Washington Post, January 9, 1991, at A14. This immediate threat, coupled with the growth of State-sponsored terrorism and changes in terrorist tactics, indicates that the current regulatory standards, which exclude the truck bomb threat and sophisticated, large group attacks supported by substantial firepower, are neither realistic nor a sufficient guarantor of the public health and safety and the common defense and security under the Act. Petitioners submit that Congressman Gejdenson, then Chairman of the Subcommittee on General Oversight and Investigations of the House Committee on Interior and Insular Affairs, was entirely correct when he noted

in 1988 oversight hearings that "prudence and common sense" compel a fundamental upgrading of 10 C.F.R. § 73.1 and related protective measures. See Statement of Congressman Sam Gejdenson in Hearings on the Threat of Sabotage and Terrorism to Commercial Nuclear Powerplants before the Subcommittee on General Oversight and Investigations of the House Committee on Interior and Insular Affairs, 100th Cong., 2d Sess. 2-3 (March 9, 1988) (hereinafter "Oversight Hearings").

B. The Changing Terrorist Threat

Since the adoption of the Commission's current standards for protection against radiological sabotage of nuclear reactors, the terrorist threat has changed in three important ways: it is bloodier; it is more sophisticated and better-armed; and it is often State-supported.² Because the nature of the threat has changed, it is incumbent on the Commission to revise its regulations to meet the potentially more severe challenges of the 1990s.

When the Commission proposed the current design basis threat, it indicated that it knew of no groups "having the

²The Commission's regulations exempt licensees from protecting against "the effects of attacks and destructive acts, including sabotage, directed against the facility by an enemy of the United States, whether a foreign government or other persons" 10 C.F.R. § 50.13. However, Petitioners understand that the Commission does not consider this exclusion to extend to terrorist groups which operate independently, even though they may have strong links to and the support of foreign governments. As the Commission Chairman testified in 1988, the exclusion only applies to "a foreign government or other foreign entity engaging in a hostile attack against the United States." Statement of Lando Zech in Oversight Hearings at 16.

combination of motivation, skill, and resources to attack either a fuel facility or nuclear power reactor," 42 Fed. Reg. 10836, col. 3 (February 24, 1977), and it considered that moral and political restraints militated against terrorists taking a large number of lives. See Hirsch, Murphy and Ramberg, "Nuclear Terrorism: A Growing Threat", presented to the Advisory Committee on Reactor Safeguards, Nuclear Regulatory Commission, May 7, 1985, at 14.³ These premises are no longer valid. Whereas in the early 1970s terrorists concentrated attacks on property, in the 1980s they directed half their attacks against people. The result has been a substantial increase of incidents with fatalities, from approximately 20 per year in the late 1960s to more than three times that number today, while the annual number of fatalities has likewise risen correspondingly, from 10-20 in 1968 to 200-700 annually in the 1980s. See Testimony of Daniel Hirsch in Oversight Hearings at 51-52. The psychological restraints against terrorists killing hundreds or even thousands of people have eroded substantially. See generally Jerrold Post, "Prospects For Nuclear Terrorism: Psychological Motivations and Constraints", in Preventing Nuclear Terrorism at 91-103. Finally, heightened security implemented to prevent such typical

³The Commission also stated that the "defense in depth" concept of nuclear reactor design "make[s] the releasing of radioactivity by acts of sabotage difficult" and that the consequences of sabotage would be less severe than the "successful detonation of an illicit explosive device." 42 Fed. Reg. at 10836, col. 3. As discussed infra in Section C, these considerations do not appear valid today in the judgment of the Commission's own staff and outside experts.

terrorist operations as hijackings and embassy takeovers, and diminishing public reaction to these events, may force terrorist groups to more dramatic and more deadly attacks. deLeon and Hoffman, The Threat of Nuclear Terrorism: A Reexamination 12-13 (Rand, January, 1988).

At the same time, the level of terrorist sophistication and firepower has risen substantially. Terrorist groups have acquired sizable conventional military arsenals, including anti-tank and anti-aircraft missiles, rocket launchers and truck-mounted flame throwers. The hijacking of the Achille Lauro and the mid-air destruction of the Air India and Pan Am airliners demonstrate not only logistical and technical expertise, but cold-blooded resolve as well. See generally Office of the Vice President, Terrorist Group Profiles (November, 1988).

Finally, the increased growth and bloodiness of terrorism are due in no small measure to the increased financial, technical, logistical and intelligence support provided by national governments. The rise of State-sponsored terrorism is well-documented. See Office of the Vice President, Terrorist Group Profiles (November, 1988). See also Eugene Mastrangelo, "Terrorist Activities By Region", in Preventing Nuclear Terrorism at 134, 141-142. The Vice President's Task Force on Combatting Terrorism indeed recently reported a 170 percent increase in the number of State-sponsored incidents in just one year -- from 70 attacks in 1986 to 189 the following year. See Office of the Vice President, Terrorist Group Profiles, supra, at iii. What is

particularly ominous, moreover, is its incipient focus on nuclear power plants as an object of attack.⁴ For example, on June 9, 1987, according to an Associated Press report on a Radio Teheran broadcast monitored in Nicosia, the Iranian government responded to the possibility of U.S. strikes against its Silkworm missile batteries by warning that "U.S. centers and nuclear reactors can be more vulnerable than the missile bases of the Islamic Republic of Iran." See "Iran-US", AP-WX-06-10-87 1006 EDT, reprinted in Oversight Hearings at 236. See also NCI correspondence with the Commission and the National Security Council concerning this report, reprinted in Oversight Hearings at 97-106. Currently, U.S. counterterrorism officials are preparing for the possibility of terrorist bombings of domestic U.S. targets in the event of a war in the Persian Gulf. James Schlesinger, a former defense secretary and director of central intelligence, has warned that "there may be a number of intermittent attacks in this country." Wall Street Journal, January 8, 1991, at A4. The Abu Nidal organization and the Palestine Liberation Front, named as credible potential threats to U.S. nuclear facilities in a 1986 Rand Corporation report, are viewed now as the most likely terrorist perpetrators of an attack in the U.S.. See Hoffman and deLeon, A Reassessment of Potential Adversaries to U.S. Nuclear

⁴A 1988 Rand Corporation study reports that State-sponsorship could provide the wherewithal "for ambitious acts of nuclear terrorism." deLeon and Hoffman, The Threat of Nuclear Terrorism: A Reexamination 12 (Rand, January, 1988).

Programs 24 (Rand, March, 1986); Wall Street Journal, January 8, 1991, at A4.⁵

The combination of these developments makes nuclear terrorism a far more likely prospect today than it was ten years ago.⁶ Indeed, NCI's Task Force members unanimously concluded that "a reactor accident brought about by terrorists, even one releasing significant amounts of radioactivity, is by no means implausible and is technically feasible." Nuclear Terrorism at 12.

C. Upgrading The Design Basis Threat To Anticipate A Vehicle Bomb Attack

In view of the changes in the terrorist threat discussed above, Petitioners submit that it is essential to upgrade the design basis threat to protect against vehicle bomb attacks at nuclear reactors, particularly truck bombs.⁷ The use of truck

⁵There has already been at least one unconfirmed threat of an Iraqi-sponsored attack on a U.S. nuclear facility. See Commission, Preliminary Notification of Threat or Unusual Occurrence - PNO-I-90-108 (December 26, 1990) (noting asserted Iraqi bomb threat to the Vermont Yankee Nuclear Power Plant).

⁶It should also be noted that the number of "safeguards events" has been increasing in the late 1980s, a disturbing trend indicating that the thought of sabotage is in currency, if not actually realized yet. See Commission, Safeguards Summary Event List (NUREG-0525, Rev. 16) (December 31, 1989); Testimony of Daniel Hirsch in Oversight Hearings at 52 and Figures 5 and 6. Hirsch noted that as of 1988 "safeguards events, including bomb hoaxes, [had] increased five-fold since the last revision to the design basis threat regulations" Id.

⁷While this Petition focuses primarily on truck bombs, it is also essential to protect against boat bombs. Many nuclear power plants are located adjacent to water and are thus at risk from attack by boat.

bombs has become a tactic of choice for terrorists. The tactic is a grave threat to civilian power plants. See generally Daniel Hirsch, "The Truck Bomb and Insider Threats To Nuclear Facilities", in Preventing Nuclear Terrorism at 207-222. Indeed, in Western Europe, nuclear power plants are protected against truck bombs by reinforced fences and walls. See Rossnagel, "Physical Protection of Special Nuclear Materials in the Federal Republic of Germany", in Preventing Nuclear Terrorism at 223-230. Although the Commission has been aware of this threat at least since 1983, nonetheless it has not responded sufficiently to date.⁸

The devastating effects of truck bombs were more than demonstrated in Beirut in 1983. There, in the space of approximately six months, truck bombs first killed 63 people at the U.S. Embassy on April 18, and then, on October 23, 241 marines at their barracks.

As early as 1984, the Commission staff recommended modification of the design basis threat to include the use of truck bombs by an adversary, noting, "The use of a vehicle bomb

⁸While there has not been an identified international terrorist threat as yet against domestic licensed reactors, terrorists have been responsible for more than one-third of non-U.S. reactor incidents in the period 1970-1984. Hoffman and deLeon, A Reassessment of Potential Adversaries to U.S. Nuclear Program 9, Table 2 (Rand, March, 1986). As was demonstrated by the arrest in 1988 of several individuals associated with the Syrian Socialist National Party while attempting to smuggle explosives into the United States, see Oversight Hearings at 240, the existence of an undetected, international terrorist threat in the United States today is a possibility which cannot be discounted.

against a nuclear facility is a feasible form of attack." See Memorandum from George W. McCorkle to Robert F. Burnett, "Semi-Annual Design Basis Threat Review No. 4," dated January 19, 1984, reprinted in Oversight Hearings at 189. In fact, in early 1984, the Commission staff set out arguments for the Commission on the need to protect against vehicle-bomb attack that have never been refuted:

- o "[N]uclear activities . . . might be a desirable target of a truck bomb due to the high visibility such an attack would receive. It therefore seems prudent to be prepared to (i) recognize such a threat and (ii) to defend against it within the framework of the plant's physical security and safeguards contingency plans."
- o Licensed reactors should be responsible for protecting against truck bombs despite the facts that (1) licensees are exempted from protecting against enemies of the United States and (2) most vehicle-bomb attacks have been of national origin, because "there is always the possibility that sub-national terrorists groups will pick up on this scenario. This would be the licensee's responsibility."
- o Despite the absence of a specific threat to a licensed commercial nuclear facility, "the [Commission] believes that the possibility of an attack by motor vehicle cannot be discounted and a prudent response is desirable for several reasons. First, vehicle bomb attacks have occurred recently overseas and have been successful. Second terrorist groups have demonstrated a capability to export their acts of violence to other countries."

Commission Staff, "Q's and A's In Anticipation of Inquiries Regarding Notice on Potential Threat" (January/February, 1984).

The vulnerability of licensed reactors to attack by explosives-laden vehicles was confirmed in 1984 in a classified study prepared for the Commission by Sandia National Laboratories. See Chapman and Bennett, "Analysis of Truck Bomb Threat for Nuclear Facilities" (February 21, 1984). According to an unclassified staff summary, this study concluded that ". . . unacceptable damage to vital reactor systems could occur from a relatively small charge at close distances and also from larger but still reasonable size charges at large setback distances (greater than the protected area for most plants)." See "Weekly Information Report to NRC Commissioners," April 20, 1984. A peer review conducted for the Commission by the Naval Ordinance Laboratory found that the Sandia report was "generally correct with a moderate level of conservatism in the consequence predictions." See Memorandum for John G. Davis from Robert F. Burnett, "Truck Bomb Threat," dated August 14, 1984, reprinted in Oversight Hearings at 195. In short, the expert analysis prepared for the Commission itself more than six years ago showed the truck bomb threat to be extraordinarily severe.

The "unacceptable damage", noted by Sandia National Laboratories and potentially associated with a successful truck bomb attack, maximally means the meltdown of a nuclear reactor core, releasing massive amounts of radioactivity, comparable to what would occur in a severe accident. The Commission has estimated, in the case of one reactor, that a severe accident could result in up to 130,000 acute fatalities, 300,000 latent

cancers, and 600,000 genetic effects, while necessitating off-site mitigation estimated to cost \$35 billion. See Commission, Supplement to Draft Environmental Impact Statement, San Onofre Units 2 and 3 (NUREG-0490, January, 1981). See generally Daniel Hirsch, "The Truck Bomb and Insider Threats to Nuclear Facilities", in Preventing Nuclear Terrorism at 206, 215-216.

These conclusions were generally supported by NCI's experts in papers prepared for its Task Force. In his paper, Gerald L. Pollack, Professor of Physics at Michigan State University, described the possibilities of severe consequences, even after a "scram", from damage caused by terrorists to multiple reactor systems -- possibilities which could well be associated with a truck bomb incident which destroyed a control room and some of the essential plumbing at a nuclear power plant. Gerald Pollack, "Severe Accidents and Terrorist Threats at Nuclear Reactors," in Preventing Nuclear Terrorism at 66-77. Robert Mullen, a safeguards and security consultant, stressed that a truck bomb could precipitate off-site radiation releases. Robert Mullen, "Nuclear Violence," in Preventing Nuclear Terrorism at 240.

The NCI Task Force agreed that truck bombs "can cause sufficient damage to essential systems to lead possibly to radioactive releases in the event of a core melt." Id. at 23. The Task Force thus recommended: "Power reactors should be protected against vehicular threats." Id. at 22. Its June, 1986 report states as follows:

The size of exclusion zones at nuclear power reactor sites should be reexamined to ensure

that the zones are large enough to neutralize the possible catastrophic consequences of a truck bomb set off at the perimeter fence. All reactor sites should be modified promptly with barriers to shield critical areas of the plant against potential consequences of truck bombs set off on-site. This may require revising the design-basis threat to include protection against vehicular access -- a requirement not included in U.S. licensing regulations

Id.

The Commission's response to the recognized truck bomb threat has been woefully deficient. While a Commission 1984 survey of the Defense Department, the Secret Service, the State Department, and the Department of Energy found that "[a]ll four agencies believe that the 'truck bomb' threat in the U.S. is sufficient to prompt action" and had "implemented measures to counter the threat", see Commission, "Comparison of Agency Response to 'Truck Bomb' Threat in the U.S." (May 9 1984), reprinted in Oversight Hearings at 193, the Commission only determined at that time to study the issue and delay action. Initial staff plans to ". . . develop an immediately effective rule which revises the design basis threat for both radiological sabotage and theft to include the introduction by an adversary of explosives and other equipment by vehicle on to a facility," see Memorandum from Robert F. Burnett to George W. McCorkle, dated January 27, 1984, reprinted in Oversight Hearings at 190, were shelved in April, 1984, when Burnett instructed his staff "to defer action pending the results of research initiated to this general subject." See Memorandum from Robert F. Burnett to

George W. McCorkle, "Design Basis Threat", dated April 26, 1984, reprinted in Oversight Hearings at 192.

The Commission met in 1985 to consider SECY-85-24, "Consideration of Modification of NRC Design Basis Threat Statement," and, in 1986, it met again to consider SECY-86-101, "Design Basis Threat -- Options for Consideration", reprinted in Oversight Hearings at 202. In neither case did the Commission act to upgrade the design basis threat to cover truck bombs. Instead, in 1986, the Commission determined to wait for further "policy guidance" from the Executive Branch and call for licensees simply to develop "security response plans." See Memorandum from Samuel Chilk to Victor Stello, "SECY-86-101 - Design Basis Threat - Options for Consideration," reprinted in Oversight Hearings at 218.

Some six years after identification of the threat, on April 28, 1989, the Commission finally responded by doing no more than issuing a "Generic Letter" (No. 89-07) which calls for licensees to develop "contingency plans" to deal with the truck bomb threat, based upon a contractor report (James, et al., A Methodology To Assist In Contingency Planning For Protection Of Nuclear Power Plants Against Land Vehicle Bombs (NUREG/CR-5246) (April, 1989)). The Generic Letter does not require licensees to plan any permanent measures against vehicle bombs, even though it is far from clear whether licensees will have sufficient warning time of a particular terrorist action to implement effective contingency plans. The Generic Letter, moreover, does not

provide for any Commission follow-up, and the Commission has not sought to measure the effectiveness of the plans developed. There is no certainty, therefore, whether the plans can be implemented on short notice or, even if they can be, whether they can adequately protect a facility against a truck bomb attack. The contingency plans themselves are, in any event, short range expedients, and no long-term measures, i.e., permanent barriers, are required.

The Commission's failure to protect against truck bombs at power plants stands in contrast to its approach for protecting fuel facilities. Almost three years ago, the Commission determined it was appropriate to alter the design basis threat for theft "to include use of land vehicles by potential adversaries attempting to commit a theft . . .," and the Commission's notice of proposed rulemaking went on to explain, "The NRC considers this change in design basis threat to be a necessary measure reflecting possible use of land vehicles by potential adversaries . . . [and] will require modification of barriers at or near the protected area boundary for vehicle denial purposes." In addition, "The change would recognize the possible use of land vehicles for breaching of perimeter barriers . . ." See 52 Fed. Reg. 49418, 49420, col. 2 (December 31, 1987). The final rule adopted by the Commission reflects implementation of these judgments. See 53 Fed. Reg. 45477 (November 10, 1988). However, no equivalent upgrade has been proposed or adopted for physical protection at power reactor sites or in the design basis

threat for radiological sabotage of reactors. Such asymmetry is nonsensical: logically the Commission cannot acknowledge "the possible use of land vehicles for breaching of perimeter barriers" -- precisely the modus operandi of a potential truck-bomb attacker -- without acknowledging the possibility of such an attack at licensed reactors.

The truck bomb threat is not likely to disappear. Short-term expedients, such as those reflected in Generic Letter No. 89-07, simply do not adequately address this threat, either for the near or longer term. Petitioners submit that the only effective approach for the Commission, consistent with its duty to assure the common defense and security and protect public health and safety under the Act, is to revise the design basis threat for radiological sabotage of nuclear reactors expressly to account for truck bombs and to specify effective regulatory measures against such a threat. Such protections can be achieved at relatively low cost. The Commission estimated in 1986, for example, that a vehicle denial system for roadway access would cost only about \$100,000 - \$200,000 per facility to install and \$10,000 - \$20,000 annually to maintain, while a perimeter access denial system would only cost \$500,000 - \$1,000,000 per facility to install and \$25,000 - \$50,000 annually to maintain. SECY-86-101, Enclosure 2, reprinted in Oversight Hearings at 209-210. The upgrade of 10 C.F.R. § 73.1 thus appears not only wise but also cost effective. Indeed, the price of protection seems small and well worth it, considering the catastrophic consequences that

could be associated with successful sabotage, including significant offsite radioactive releases and the crippling of a power plant.

D. Upgrading The Design Basis Threat To Anticipate Attacks By More Sophisticated, Larger And Better-Armed Groups

It is equally important to upgrade the design basis threat to anticipate attacks by more sophisticated, larger and better-armed groups. There are essentially two components to this upgrade: (1) a larger number of attackers, with the capability to act in several coordinated teams; and (2) heavier firepower.⁹

The current design basis threat for sabotage, as noted above, assumes an attack by no more than a discrete, very limited number of attackers operating as a single unit or team. However, at least one incident, the attempted sabotage of Arizona Nuclear Power Project, Palo Verde Units 1, 2, and 3, on May 14, 1986, appears to have exceeded this assumption. In that incident, offsite power to Palo Verde was deliberately interrupted at three out of four widely separated transmission lines. The three power disruptions occurred within minutes of each other, yet they were miles apart. In each case, the saboteurs had to climb more than

⁹The current standard is somewhat ambiguous because it does not specifically include a reference to vehicular support, i.e., attackers arriving by means other than foot. Chairman Zech stated during the 1988 oversight hearings: "NRC's design basis threat includes any mode of transportation -- any mode of transportation -- to get to the site, or through the perimeter barrier. Our design basis threat assumes any mode that could get through the barrier -- car, boat, truck or another method of transportation." Statement of Lando Zech in Oversight Hearings at 17. See also id. at 27. Plainly the design basis threat itself should explicitly recognize this prospect.

100 feet above ground and execute an extremely dangerous maneuver to short circuit the power lines. See NRC Preliminary Notification, PNS-V-86-03, "Suspected Sabotage: Loss of Three of Four Offsite Power Sources" (May 15, 1986) and related documents, reprinted in Oversight Hearings at 231-235. The complexity of the attack and the distances involved clearly indicate that several independent yet well-coordinated teams were involved, and it seems plausible that each team may have been composed of several attackers. This incident plainly reveals that current assumptions concerning numbers of attackers are outdated and not supportable.

In Latin America and Europe large group attacks on nuclear facilities have been documented, viz., the March 25, 1973, attack by fifteen terrorists on the Atucha Atomic Power Station in Argentina. See Konrad Kellen, "The Potential For Nuclear Terrorism: A Discussion", in Preventing Nuclear Terrorism at 104, 122. Moreover, even within the United States, there has been substantial expert testimony in Commission licensings that large group attacks are plausible. See Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plants, Units 1 and 2), CLI-82-19, 16 NRC 53, 71-74 (1982) (noting testimony that "the PLO would be capable of assembling a force of twelve design basis intruders to attack [the plant]"). Simply put, "[A]dversaries determine group size for a given action upon their perception of the number required to optimize the chance of success, consistent with security requirements and payoff." Stewart, et al., Generic

Adversary Characteristics Summary Report 42 (NUREG-0459, March, 1979). There is, in sum, every reason to conclude that a larger group, i.e., of up to twenty persons, operating in teams, might well be a logical terrorist choice if the goal is to overcome a reactor's security defenses and cause civilian panic and/or widespread death and destruction. See generally deLeon, Jenkins, Kellen, and Krofcheck, Attributes of Potential Criminal Adversaries of U.S. Nuclear Programs (Rand, January, 1978).

At the same time, it is logical to expect such a group of attackers to be well-equipped with weaponry. The current design basis threat assumes that attackers would be equipped with nothing more threatening than hand-held automatic weapons or hand-carried explosives. With the widespread availability today of much heavier firepower, including rocket launchers and heat-seeking missiles, anti-tank weapons and small calibre anti-aircraft guns, and with the prospect of weapons being obtained illegally from military arsenals, the assumption is no longer warranted. See Office of the Vice President, Terrorist Group Profiles (November, 1988). For example, the ETA, a Basque separatist terrorist group in Spain, launched nearly 100 attacks against two nuclear plants under construction, using powerful remote-detonated bombs, plastic explosives, hand grenade launchers and anti-tank rockets. The attacks resulted in more than \$7 million in damage. See Konrad Kellen, "The Potential For Nuclear Terrorism: A Discussion," in Preventing Nuclear Terrorism at 104, 124-132.

III. Specific Regulatory Action Requested

In light of the considerations outlined above, the design basis threat for radiological sabotage in nuclear reactors contained in 10 C.F.R. § 73.1(a)(1) should be amended to read as follows:

(1) Radiological sabotage. (i) A determined violent external assault, attack by stealth, or deceptive actions, of several [add:] up to twenty persons [Add:] operating as two or more teams with the following attributes, assistance and equipment: (A) Well-trained (including military training and skills) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g. provide information), an active role (e.g. facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both, (C) suitable weapons [delete: up to and including hand-held automatic weapons, equipped with silencers and] having effective long range accuracy, (D) [delete: hand-carried] equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system, [add:] in quantities transportable by vehicle, and

The Commission should further take such other action as may be necessary to ensure that the specific protective measures set forth in 10 C.F.R. Part 73 are sufficient to respond to such increased threat and indeed provide the "high assurance" required under 10 C.F.R. § 73.55(a) that the threat of sabotage will be effectively countered.

IV. Time For Commission Action On The Design Basis Threat Upgrade

Petitioners believe that the rule changes sought by this Petition are vitally important to reduce grave risks to the public health and safety and the common defense and security. They are based on data and information generally known and available to the Commission. Prompt action is required. Petitioners consequently request that the Commission make a determination on the Petition, in accordance with 10 C.F.R. § 2.803, not later than 30 days from the date of its receipt, and that it thereafter proceed immediately to promulgate the requested revision to its design basis threat and specification of protective measures, waiving notice and public comment under 10 C.F.R. § 2.804(d)(2).

V. Request For Emergency Action Related To Implementation Of Truck Bomb Contingency Plans

However quickly the Commission proceeds to upgrade the design basis threat, it is unlikely to be soon enough to respond to the immediate possibility of terrorist attacks against domestic nuclear facilities which might be attendant upon the outbreak of hostilities in the Middle East. As noted above, this possibility is far from implausible, especially as a logical retaliatory action if the U.S. should attack Iraqi nuclear facilities. Consequently, Petitioners request the Commission, on an emergency basis, forthwith to require that existing licensee contingency plans against truck bombs, as developed under Generic Letter No. 89-07, be put into effect at once. All plans should be operational not later than January 15, 1991, the date

established by the United Nations for Iraqi withdrawal from Kuwait. Immediately thereafter, the Commission should undertake an evaluation of the adequacy of the plans and require such improvements therein, on a plant-by-plant basis, as it deems necessary to ensure their adequacy. The action requested by Petitioners is essential because there can be no assurance that a truck bomb threat against a nuclear power plant or plants could be identified before-the-fact and, even if it were, licensees may be unable to effectuate the plans within the twelve-hour warning time contemplated under Generic Letter No. 89-07.

CONCLUSION

The design basis threat, which defines power plant security requirements, must exceed by some margin any real threat that is likely to be encountered. With respect to terrorist action, the contrary situation appears closer to reality: events appear to have overtaken the anticipated threat level. In any event, the Commission's current regulatory approach, which is premised on "likely threats" rather than "maximum credible threats", unjustifiably discounts larger threats. Since it is impossible reliably to predict deliberate, malevolent human acts such as sabotage and thus impossible to rule out such events occurring with maximum destructive intent and effect, the Commission's approach puts civilian nuclear reactors at unjustifiable risk.

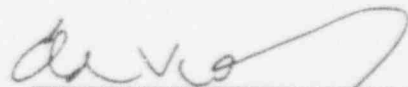
The Commission recognized in proposing the current standard that a time might come when events would require a revision of the design basis threat:

The kind and degree of threat and vulnerabilities to such threats will continue to be reviewed by the Commission. Should such reviews show changes that would dictate different levels of protection the Commission would consider changes to meet the changing conditions.

See 42 Fed. Reg. 10836, col. 3 (February 24, 1977). For the reasons discussed above, Petitioners submit that such a time has come, and that the Commission should revise the design basis threat to accommodate the increased potential for a terrorist attack against licensed nuclear reactors and take concomitant action to specify necessary protective countermeasures to be implemented by licensees.

Petitioners request that the Commission inform them within 30 days concerning the action it intends to take with respect to the rulemaking sought by this Petition. Petitioners further request that the Commission advise them promptly with respect to its decision concerning emergency implementation of truck bomb contingency plans.

Respectfully submitted,



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Nuclear Control Institute and
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Dated: January 11, 1991
Washington, D.C.

**NUCLEAR REGULATORY
COMMISSION****10 CFR Part 73****[Docket No. PRM-73-9]****Nuclear Control Institute, et al., Denial
of Petition for Rulemaking****AGENCY:** Nuclear Regulatory
Commission**ACTION:** Denial of petition for
rulemaking

SUMMARY: The Nuclear Regulatory Commission (NRC) is denying a petition for rulemaking submitted by Eldon V. C. Greenberg on behalf of the Nuclear Control Institute and the Committee to Bridge the Gap (PRM-73-9). The petitioners requested that the Commission revise its regulations to upgrade the design basis threat for radiological sabotage of nuclear power reactors. The petitioners believe that the design basis threat must be revised to include explosive-laden vehicles, such as truck and boat bombs, and to reflect the possibility of an attack by a larger number of attackers using more sophisticated weapons. The petition is denied based on a Commission determination that there has been no change in the domestic threat since the design basis threat was adopted that would justify a change in the design basis threat.**ADDRESSES:** Copies of the petition for rulemaking, the public comments received, and the NRC's letter to the petitioner are available for public inspection or copying in the NRC Public Document Room, 2120 L Street NW., (Lower Level), Washington, DC.**FOR FURTHER INFORMATION CONTACT:** Carl B. Sawyer, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 492-0366.**SUPPLEMENTARY INFORMATION:**

- I. The Petition
- II. Petitioners' Basis for Request
- III. Requested Regulatory Action
- IV. Public Comments on the Petition

V. NRC Staff Evaluation of the Petition
VI. Statement of Denial

I. The Petition

By letter dated January, 11, 1991, shortly before the commencement of Operation Desert Storm, Eldon V.C. Greenberg, on behalf of the Nuclear Control Institute and the Committee to Bridge the Gap, filed a petition for rulemaking with the NRC. The petition was docketed as PRM-73-9. The petitioners requested that the NRC revise its regulations in 10 CFR 73.1 to upgrade the design basis threat for radiological sabotage of nuclear power reactors. (Radiological sabotage refers to any deliberate act directed against nuclear material or a nuclear facility that could endanger the public health and safety by exposure to radiation.) The petitioners believe that the regulation must be revised to include explosive-laden vehicles, such as trucks and boats, and to reflect the possibility of attack by a large number of attackers using more sophisticated weapons.

The petitioners contend that the present design basis threat is not realistic in view of the claimed current trends in terrorism. The petitioners state that a successful terrorist attack could cause the release of radioactivity comparable to a severe nuclear accident, and result in significant health and safety consequences and property damage. The petitioners believe that the increased threats may be countered by measures which could be implemented for a modest cost but would protect against events with potentially catastrophic consequences.

The petition describes the Nuclear Control Institute as a non-profit corporation, that monitors nuclear programs in the United States and other countries, develops strategies to prevent and reverse the growth of nuclear armaments and explores strategies for reducing existing nuclear arsenals thereby helping to prevent nuclear proliferation and terrorism. The petition describes the Committee to Bridge the Gap as an organization concerned with nuclear safety and the threat of nuclear terrorism.

II. Petitioners' Basis for Request

The NRC has established regulations in 10 CFR part 73 governing the physical protection of plants and materials. These regulations include measures related to the protection of nuclear facilities against radiological sabotage. Section 73.1, among other things, establishes the design basis threat to be used to design safeguards systems to protect nuclear power reactors against acts of radiological sabotage.

The petitioners state that § 73.1, as interpreted by the Commission, does not require nuclear reactor licensees to protect against radiological sabotage attempts by a group or an individual using weapons of greater sophistication than hand-held automatic weapons or explosives, thereby excluding an attack by explosive-laden vehicles, or more than several external attackers, or attackers operating as more than one team and employing team maneuvering tactics.

The petitioners believe that terrorist incidents which have occurred since the design basis threat was adopted demonstrate the ability and willingness of terrorists to mount sophisticated attacks capable of causing substantial physical destruction, particularly through the use of truck bombs. Because of the Persian Gulf crisis, the growth of State-sponsored terrorism, and changes in terrorist tactics, the petitioners believe that current regulatory standards do not provide a realistic or sufficient guarantee of public health and safety or common defense and security.

The petitioners state that the terrorist threat has become bloodier, more sophisticated and better armed, and frequently State-supported. As a result, the petitioners believe that the possibility of nuclear terrorism, resulting in a substantial number of casualties, is far more likely today than it was in 1979, when current regulations were promulgated.

The petitioners believe that it is essential to upgrade the design basis threat to protect against vehicle bomb attacks which they believe pose a grave threat to civilian nuclear power plants. The petitioners cite the devastating effects of the truck bomb attacks in Beirut in 1983. The petitioners state that studies have indicated the vulnerability of licensed power reactors to attack by explosive-laden vehicles and the potentially devastating consequences of such an attack.

The petitioners believe that it is essential to change the design basis threat to anticipate attacks by more sophisticated, larger, and better-armed groups. The petitioners state that there are two components to this threat: (1) A larger number of attackers with the capability to act in several coordinated teams; and (2) heavier firepower. The petitioners cite documented large group attacks on nuclear facilities in Latin America and Europe and the widespread availability of advanced weaponry as indications that the current design basis threat is no longer realistic.

III. Requested Regulatory Action

The petitioners requested that the design basis threat for radiological sabotage contained in 10 CFR 73.1(a)(1)(i) be amended to read as set forth below. Note that text to be added is set off by arrows and text to be removed is set off in brackets.

Section 73.1 Purpose and Scope

(a) * * *

"(1) *Radiological sabotage.* (i) A determined violent external assault, attack by stealth, or deceptive actions of several ► up to twenty ◄ persons ► operating as two or more teams ◄ with the following attributes, assistance, and equipment: (A) Well-trained (including military training and skills) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g. provide information), as active role (e.g. facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both, (C) suitable weapons [, up to and including hand-held automatic weapons, equipped with silencers and] having effective long range accuracy, (D) [hand-carried] equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features to the safeguards system, ► in quantities transportable by vehicle ◄, and"

The petitioners requested that the NRC take other actions necessary to ensure that the specific protective measures contained in 10 CFR part 73 are sufficient to respond to the increased design basis threat and provide the high assurance required under § 73.55(e) that the threat of sabotage will be effectively countered.

Because the petitioners believe that the suggested amendments are vitally important to reduce risks to the public health and safety and the common defense and security, the petitioners requested that the Commission make a determination on the petition within 30 days from the date of receipt and that it proceed immediately to promulgate a final rule, without issuing a proposed rule, that would adopt the requested amendments.

The Commission evaluated the petitioners' request for expedited action. The Commission determined that the petition should be processed in accordance with its standard procedures for processing a petition for rulemaking in § 2.802(e), but expedited by limiting

the comment period to 30 days. That determination was contained in the "Notice of receipt of petition for rulemaking" that was published in the Federal Register on January 28, 1991 (50 FR 3229). Interested persons were invited to submit written comments or suggestions concerning the petition by February 28, 1991.

IV. Public Comments on the Petition

As of March 15, 1991, the NRC had docketed 35 letters of comment: 11 from individuals, 3 from public interest groups, and the remaining 21 from industry or industrial representative organizations. In addition the NRC received three letters from Congressmen. While the comments were carefully considered by the NRC, none contained significant new information which would warrant a change in the design basis threat. In the summary that follows, the views presented are those of the commenters.

A. Comments Opposing the Petition

Twenty-one commenters opposed the petition. The main reasons cited by these commenters in support of the current regulations were:

1. The NRC staff, in concert with the intelligence community and other Federal agencies, continually monitors world events for potential threats associated with commercial nuclear facilities. These agencies have unique access to information, including sensitive or classified information not normally available to the general public.

2. Nuclear power plant licensees are in close communication with local law enforcement agencies and the NRC to ensure that any security threat in local areas is promptly identified and communicated. The response to the current Middle East situation should have (and has) heightened awareness and sensitivity on the part of licensee personnel and Federal, State, and local law enforcement officers.

3. Nuclear power plant licensees have established detailed security measures, as required by the NRC in 10 CFR 73.55 (b) through (h), to counter the design basis threat. These measures include:

- Physical protection barriers and illuminated isolation zones;
- Surveillance and patrols of the perimeter fence;
- Intrusion detection aids and alarm devices;
- A tactical reaction force;
- Bullet-resistant barriers for critical areas;
- A well trained guard force capable of carrying out the provisions of an NRC-approved security plan;

- Access controls for personnel and vehicles, with searches and positive identification; and
- Capability to execute safeguards contingency plans for dealing with threats, including truck bomb threats.

In addition, nuclear power plant licensees also have established detailed security related personnel programs, which include:

- Background investigations with FBI criminal history checks;
- Psychological testing;
- Drug and alcohol fitness for duty determinations; and
- Special supervisory training for behavioral observation.

Also, through the NRC's regulatory effectiveness review program, individual power reactor sites are evaluated for security vulnerabilities and their ability to counter the design basis threat.

4. Nuclear power plant design is based on the defense in depth philosophy in providing adequate public protection. Massive containment structures, thick wall piping and equipment with redundant safety and shut-down systems are constructed to permit the facility to withstand the impact of earthquakes, hurricanes, tornados, floods, and airplane crashes. Detailed training and plant-specific simulators provide added assurance. Emergency planning and public notification systems add yet another layer of capability designed to protect the public health and safety. The approved plans are periodically evaluated during exercises.

5. The petitioners have not presented any new information related to the current situation; they have simply restated old opinions, none of which provides a basis for altering the design basis threat in this country.

6. Several of the commenters opposing the petition took issue with the petitioners' view that the protection measures proposed by the petitioners could be put into place at modest cost. One commenter, a power reactor licensee, estimated the cost at \$1 million to \$3 million per year at his facility.

B. Comments Supporting the Petition

Seventeen letters supported the petition. These letters are summarized as follows:

1. The most common concern stemmed from the Middle East situation that existed during the public comment period (the comment period lasted from January 29 until February 28, 1991). These commenters pointed out that Iraq had issued a "terrorist call to arms," that the U.S. military had attacked Iraqi reactors, and thereby legitimized U.S.

reactors as terrorist targets; that informed and respected Americans have warned of possible terrorist attack within the U.S.; and that terrorist action might reasonably include reprisals against U.S. reactors.

2. Another common theme was rejection of the NRC view that the design basis threat currently set forth in NRC regulations continues to be adequate. These commenters argue that events in the Middle East are a sufficient basis for escalating the design basis threat to the levels called for in the petition.

3. Several commenters believe that power reactors are vulnerable to radiological sabotage; specifically, barriers may be easily breached and vital systems may be sabotaged.

4. Some commenters put forth the following cost argument: The consequence (and hence the cost) of successful radiological sabotage of a reactor is high in the extreme while the cost of protection is relatively modest. It is therefore prudent for the NRC to require the measures recommended by the petitioners.

5. One commenter put forward the argument that barriers are already in place to protect reactors in Europe and Japan and the conclusion that only minor structural modifications would be needed to protect U.S. reactors against truck bombs.

6. One commenter suggested that the primary threat to security is deranged persons who might use trucks or suicidal air attack. The commenter concluded that upgrading reactor protection along the lines of the petition seems cost effective.

The above concerns raised by the commenters are addressed in the NRC staff evaluation of the petition (section V of this Federal Register notice).

V. NRC Staff Evaluation of the Petition

The NRC staff believes that a decision on the petition can be based on response to a single pivotal issue: Has the threat of radiological sabotage of domestic nuclear reactors changed to an extent that justifies a need to upgrade the current design basis threat? The petitioners believe that the threat to domestic nuclear reactors has intensified in two ways: (1) The possible use of large truck bombs or boat bombs to cause radiological sabotage, and (2) the possible use of a larger number of attackers armed with heavier weapons.

The nature of terrorism was the subject of detailed analysis before the NRC published its design basis threat (§ 73.1), and it continues to remain the focus of staff review. NRC efforts in

creating the design basis threat and the actions taken by the NRC since the publication of § 73.1 to assure its continuing validity remain a key component in the NRC safeguards program.

Thousands of acts of terrorist violence worldwide, ranging from simple attacks on property to the sophisticated, deadly bombing of civil airlines, are examined and analyzed by the NRC. The NRC uses a wide variety of information, ranging from that reported directly from the scene of the incident to that included in a finished analysis provided by the intelligence community. Throughout this ongoing daily analysis, the staff focuses its effort on reviewing realistic, not hypothetical, adversary characteristics, including weaponry, group size, tactics, explosives, and targets. The NRC then compares what has occurred or is credible to the attributes enumerated in the design basis threat.

With respect to truck and boat bombs of the size estimated in NRC studies as being capable of causing significant damage to domestic power reactors, the NRC staff notes the following:

- There has been one such truck bomb in the U.S. (Math Lab, Wisconsin, 1970).
- There have been no others in the Western Hemisphere.
- There have been no others outside of an area of civil unrest.
- There have been none directed against a nuclear activity worldwide.
- There have been no boat bombs directed at any activity, nuclear or otherwise, worldwide.
- Contingency planning to protect against truck bombs has been completed for all domestic power reactors.

Based on the foregoing facts, on discussions with appropriate elements of the Executive Branch, and on NRC's independent assessment of the domestic threat environment, the NRC concludes that the likelihood of nuclear terrorism involving the use of large truck bombs against nuclear power reactors in the United States is extremely low, that a change in the design basis threat for radiological sabotage is unwarranted, and that contingency planning is sufficient.

The NRC reviewed issues related to the waterborne vehicle bomb in 1989 and concluded that no action was required at that time. The NRC has recently reviewed these issues again and concluded that there have been no significant changes. These conclusions are based, in part, on a review of worldwide terrorist events, where the threat of waterborne vehicle bomb attack against a power reactor was found to be much less likely than the

threat of a land vehicle bomb, which itself was only a remote possibility. Accordingly, there is little basis for further considering the waterborne bomb threat at this time.

The petitioners also believe it is important to upgrade the design basis threat to anticipate attacks by more sophisticated, larger and better-armed groups; specifically (1) a larger number of attackers with the capability to act in several coordinated teams, and (2) heavier firepower.

The NRC is aware that, as described by the petitioners, larger terrorist groups with heavier firepower than contemplated in the current design basis threat have carried out operations in foreign countries. The NRC is also aware of one incident described by the petitioners involving three coordinated, near simultaneous acts of sabotage on unprotected power transmission lines serving, but some miles from, the Arizona Nuclear Power Project, Palo Verde Units 1, 2, and 3. The acts constituted no threat to the safe operation or safe shutdown of the reactors. No violence was involved against the reactors or reactor sites. The most recent of the above events is almost five years old at the time of this writing. They have been considered at length and evaluated by the NRC. The terrorist actions in foreign countries and the transmission line sabotage events are remote, both spatially and by the nature of the events, from constituting a direct peril to a domestic power reactor. The NRC continues to believe that, to date, there has been no significant change in weaponry, group size, state sponsorship, or targeting that warrants a modification of the design basis threat requirements for NRC licensed nuclear power reactors.

The following discussion presents a detailed NRC analysis and response to the significant excerpts from the petition.

1. Excerpt * * * nuclear reactors need not protect against radiological sabotage attempts by (i) a group or individual using weapons of greater sophistication than hand-held automatic weapons or explosives, thus excluding attack by explosives-laden vehicles, or (ii) more than three (3) external attackers or attackers capable of operating as more than one team, i.e., capable of employing "effective team maneuvering tactics." (p. 4)¹

Response. It is important to remember that the current design basis threat for power reactors is a hypothetical threat statement. The statement is set forth in the regulations in positive rather than negative terms and is given in § 73.1(a)(1) as follows: "(1) Radiological sabotage. (i) A determined violent

external assault, attack by stealth, or deceptive actions, of several persons with the following attributes, assistance and equipment: (A) Well-trained (including military training and skills) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both, (C) suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having effective long range accuracy, (D) hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system, and (ii) an internal threat of an insider, including an employee (in any position)."

When the design basis threat was developed, there was no credible threat targeting power reactor in this country. The NRC believes that this continues to be the case, notwithstanding the statements made in the petition and suggested by some commenters. In particular, although changes are occurring worldwide, the NRC has not detected, to date, any significant change to the threat environment, including weaponry, group size, state sponsorship, or targeting, that warrants a modification of the design basis threat for NRC licensed nuclear facilities and materials. Although the adequacy of the design basis threat was questioned in the petition and by some commenters, the safeguards system developed from the current design basis threat is deemed adequate and appropriate by the Commission. This system includes a physical security organization, physical barriers, access controls, detection aids, communications, testing and maintenance provisions, response provisions, armed responses and provisions for offsite law enforcement response. It is important to note that the effectiveness of this system is not limited to the design basis threat. In particular, in the face of a threat greater than the design basis threat the system would not collapse, but would continue to provide a level of protection that may well be adequate. In addition, power reactors are required to have contingency plans to address the truck bomb threat. Should the domestic threat environment change significantly, NRC intelligence specialists, in coordination with other government entities, would propose appropriate changes to the

¹ Petition page number containing the excerpt.

design basis threat based upon the specifics of the threat environment.

2. Excerpt: This immediate threat [Iraq situation], with the growth of State-sponsored terrorism and changes in terrorist tactics, indicates that the current regulatory standards, which exclude the truck bomb threat and sophisticated, large group attacks supported by substantial firepower, are neither realistic nor a sufficient guarantor of the public health and safety and the common defense and security under the Act. (p. 5)

Since the adoption of the Commission's current standards for protection against radiological sabotage of nuclear reactors, the terrorist threat has changed in three important ways: it is bloodier; it is more sophisticated and better-armed; and it is often State-sponsored. Because the nature of the threat has changed, it is incumbent on the Commission to revise its regulations to meet the potentially more severe challenges of the 1990s. (p. 6)

Response: The nature of terrorism was the subject of detailed analysis preceding publication of the NRC design basis threat and remains the focus of continuing staff review. NRC efforts in creating the design basis threat requirements, and actions since their publication to assure their continuing validity, remain key components in the NRC safeguards program.

Thousands of acts of terrorist violence worldwide, ranging from simple attacks on property to the sophisticated and deadly bombing of civil airlines, are examined and analyzed. The NRC uses a wide variety of information that is either reported directly from the scene of the incident or included in a finished analysis provided by the intelligence community. Throughout this ongoing daily analysis, the NRC focuses its effort on reviewing realistic, not hypothetical, adversary characteristics—including weaponry, group size, tactics, explosives, and targets—and compares the events that have occurred or information that is credible to the attributes enumerated in the design basis threat statements.

On occasion, NRC effort focuses on a particular facet of terrorism or on information that suggests a trend may be developing. For example, the use of vehicle bombs in Lebanon, as discussed below, was closely examined. Similarly, the use of hang gliders, boats, the degree of sophistication exhibited, and state sponsorship have and continue to merit close examination.

The NRC's purpose is not to catalog every demonstrated or hypothetical terrorist attribute for subsequent inclusion in the design basis threat statements. NRC staff experience, analysis and judgment, as well as the views of other Federal agencies, are applied in the threat assessment

process. In its continuing review, the NRC considers demonstrated attributes to determine whether or not they exceed current safeguards performance objectives. When an attribute does exceed those objectives, it then becomes the focus of additional and timely examination, including discussion with the intelligence community or special study regarding that specific attribute, to establish in a factual manner a comprehensive characterization, including the motivation, dedication, and method of operation of the adversary. Importantly, the NRC examines and includes the circumstances or context surrounding a specific terrorist incident in its deliberation.

For example, the conditions present in the civil strife of Beirut, Lebanon, that resulted in vehicle bomb attacks, are not easily replicated in the United States. Notwithstanding statements made in the petition and supported by some commenters, the NRC would argue against the likelihood of such vehicle bomb attacks domestically.

The likelihood that terrorists would attempt to perpetrate an act of nuclear terrorism is of concern to the NRC and the Federal government. Based on its own analytic activities and working closely with other agencies, the NRC monitors the threat environment for indications that the likelihood of nuclear terrorism is increasing. Any report of a threat against a domestic nuclear facility receives immediate review and threats against a nuclear facility overseas receive continued attention. On this particular point, the NRC agrees with a statement made by commenters who oppose the petition: That the NRC has access to relevant sensitive or classified information not normally available to the public. Each incident, whether against a nuclear facility or not, is closely examined in the context of the design basis threat to assess its impact. Because of the increased number of events occurring concurrently with the Middle East crisis, NRC has increased data available to base its determination of any significant change in the threat environment, with particular focus on any increased threat of nuclear terrorism. Decision-makers are being briefed, some on a daily schedule, regarding threats and terrorist incidents worldwide, and staff planning includes response options available to address evolving threats worldwide and domestically.

Although changes are occurring worldwide, the NRC has not detected, to date, any significant change to the threat environment, including weaponry, group size, state-sponsorship, or targeting, that

warrants a modification of the design basis threat statements for NRC licensed nuclear power reactors. Nonetheless, the NRC continues, on a daily basis and with ongoing vigilance, to review information on threats and incidents to assure that the design basis threat statements remain adequate, prudent, and reasonable.

3. Excerpt: It is equally important to upgrade the design basis threat to anticipate attacks by more sophisticated, larger and better-armed groups. There are essentially two components to this upgrade: (1) a larger number of attackers, with the capability to act in several coordinated teams; and (2) heavier firepower. (p. 19)

In Latin America and Europe large group attacks on nuclear facilities have been documented, viz., the March 26, 1973, attack by fifteen terrorists on the Atucha Atomic Power Station in Argentina. (p. 20)

* * * the ETA, a Basque separatist terrorist group in Spain, launched nearly 100 attacks against two nuclear plants under construction, using powerful remote-detonated bombs, plastic explosives, hand grenade launchers and anti-tank rockets. The attacks resulted in more than \$7 million in damage. (p. 21)

Response: The NRC agrees that terrorist groups larger than and with heavier firepower than contemplated in the design basis threat have carried out operations in foreign nations. The operations were carried out in nations experiencing armed civil unrest, a situation not prevalent in the United States. The NRC has not identified, to date, any significant change or trend involving weaponry, group size, state-sponsorship or targeting that warrants a modification of the design basis threat statements for NRC licensed nuclear power reactors. If such a change were to occur, the NRC response would be scaled to the immediacy and scope of the threat.

4. Excerpt: The Commission's regulations exempt licensees from protecting against "the effects of attacks and destructive acts, including sabotage, directed against the facility by an enemy of the United States, whether a foreign government or other persons." * * * 10 CFR 55.15. However, Petitioners understand that the Commission does not consider this exclusion to extend to terrorist groups which operate independently, even though they may have strong links to and the support of foreign governments. (p. 6)

Response: The NRC agrees with this statement. The information on threats and incidents routinely reviewed by the NRC and considered in threat assessments as discussed in the foregoing responses, includes activities of terrorist groups which operate independently, but may have strong

links to and the support of foreign governments.

5. *Excerpts.* The Commission also stated that the "defense in depth" concept of nuclear reactor design "makes[s] the releasing of radioactivity by acts of sabotage difficult" and that the consequences of sabotage would be less severe than the "successful detonation of an illicit nuclear explosive device." 41 FR at 10836, col. 3. As discussed *infra* in section C, these considerations do not appear valid today in the judgment of the Commission's own staff and outside experts. (p. 7)

The "unacceptable damage," noted by Sandia National Laboratories and potentially associated with a successful truck bomb attack, maximally means the meltdown of a nuclear reactor core, releasing massive amounts of radioactivity, comparable to what would occur in a severe accident. The Commission has estimated, in the case of one reactor, that a severe accident could result in up to 1,700 acute fatalities, 300,000 latent cancers, and 400,000 genetic effects, while necessitating offshore mitigation estimated to cost \$3.5 billion. (p. 12)

Response. The NRC continues to believe that, in general, the consequences of sabotage would be less severe than the consequences from successful detonation of an illicit nuclear explosive device. An illicit nuclear explosive device would be portable and could be directed against a heavily populated area or be directed against a seat of government and detonated at a time selected for maximum explosive effect. All licensed power reactors are fixed. Moreover, as discussed below, the NRC does not believe that the consequences referred to in the petition would appropriately serve as a primary basis for formulation of a design basis threat.

The term "unacceptable damage", as used in reports of the Sandia study upon which the petitioner's truck bomb arguments are based, refers to the blast effects on a concrete wall panel and is in the section of the reports that discussed modeling of structural responses to far-field blast waves. It is not used in the reports in the sense of predicting an offsite release.

While one can conclude that using the stand-off distances developed in this report would ensure safety from a potential truck bomb threat, the report does not support the corollary conclusion, i.e., that a truck bomb, placed closer to the reactor, would necessarily result in a substantial radiological release. The massive structures, redundant safety systems and damage mitigation features of currently licensed reactors each provide a certain, although unquantified measure of protection against an uncontrollable release of radioactive

material resulting from a truck bomb, irrespective of stand-off distance.

Acceptance of 130,000 acute fatalities,² which is the worst case presented in the document cited, implies acceptance of each of the following propositions as true:

- (1) That a terrorist group favors nuclear reactor sabotage over other targets that exist in the U.S.;
- (2) That they construct a very large truck bomb undetected;
- (3) That indicators from terrorist activity worldwide do not trigger implementation of truck bomb contingency plans;
- (4) That the truck bomb is successfully emplaced at a reactor and detonated;
- (5) That blast distance and size are sufficient to cause significant damage;
- (6) That the reactor has been operating at power for some time;
- (7) That the reactor's redundant safe-shutdown systems are all disabled;
- (8) That containment is massively breached;
- (9) That large quantities of radionuclides are released to the atmosphere;
- (10) That the wind and other meteorological conditions are favorable to the worst case consequences;
- (11) That there is a large city nearby in a downwind direction; and
- (12) That the local population, even that part nearest the reactor, elects to remain in place for seven days with no mitigating measures.

The NRC considers the foregoing set of assumptions to be unlikely in the extreme and not an appropriate basis for safeguards rulemaking.

6. *Excerpts.* Indeed, NCI's Task Force members unanimously concluded "that a reactor accident brought about by terrorists, even one releasing significant amounts of radioactivity, is by no means implausible and is technically feasible." (p. 10)

Response. The NRC has accepted the notion that reactor sabotage, with radiological releases, is technically feasible for many years. Measures are employed at power reactors to protect against credible radiological sabotage scenarios. In the unlikely event of radiological sabotage, damage control and accident mitigation measures would likely limit the amount of radioactivity released.

7. *Excerpt.* There has already been at least one unconfirmed threat of an Iraqi-sponsored

attack on a U.S. nuclear facility. See Commission, Preliminary Notification of Threat or Unusual Occurrence—PNO-I-90-108 (December 26, 1990) (noting asserted Iraqi bomb threat to the Vermont Yankee Nuclear Power Plant). (p. 10)

It should also be noted that the number of "safeguards events" has been increasing in the late 1980s, a disturbing trend indicating that the thought of sabotage is in currency, if not actually realized yet. See Commission, *Safeguards Summary Event List* (NUREG-0525, Rev. 18) (December 31, 1989). Testimony of Daniel Hirsch in *Oversight Hearings* at 52 and Figures 5 and 6. Hirsch noted that as of 1985 "safeguards events," including bomb hoaxes, [had] increased five-fold since the last revision to the design basis threat regulations." * * *. (p. 10)

Response. The referenced Preliminary Notification (PNO-I-90-190, December 26, 1990) concerned an anonymous phone call to the Governor-elect of Vermont stating that Iraqi troops were going to bomb Vermont Yankee Nuclear Power Plant. All of the appropriate law enforcement agencies were notified of the call, including the Federal Bureau of Investigation. On the basis of other information available at the time, the caller's information was deemed to be non-credible. Incidentally, there were a number of other sabotage and attack threats to licensees during the period of the recent Persian Gulf crisis. A listing of all such events for the period August 2, 1990, to February 21, 1991, is provided (see appendix). Although there were a substantial number reported, none were considered to be significant.

The NRC has reviewed the assertion that safeguards events, including bomb hoaxes, have increased "five-fold" since the "last revision to the design basis threat regulations." A number of factors substantially account for this increase. First, NRC reporting requirements, i.e., the types of events that are required to be reported by NRC licensees, have been expanded. As the nuclear industry has implemented "Fitness for Duty" programs, more drug and alcohol-related events have been reported, regardless of whether or not any additional risk to the safe operation of the facility was involved. Second, more firearms have been detected during required routine entry searches, although, typically, no malevolent intent towards facility was identified. Third, the number of operating reactors has increased during the past ten years, and thus, the number of safeguards-related events has increased during the same period.

The influence of event data reported in the Safeguards Summary Event List (NUREG-0525) on the design basis threat statements merits careful examination. Clearly, the number of

² This estimate was reported in Supplement to Draft Environmental Statement, San Onofre Nuclear Generating Station, Units 2 and 3 (NUREG-0490), dated January 1981. The corresponding estimate reported in the Final Environmental Statement, San Onofre Nuclear Generating Station, Units 2 and 3 (NUREG-490), dated April 1981 was 30,000.

events alone reported in the list does not suggest a significant change has occurred in the threat environment. The NRC considers a variety of factors, the most important being demonstrated adversary characteristics, in determining the status of the design basis threat statement for radiological sabotage. The events identified in the list typically represent hoaxes, i.e., non-credible threats, or adversary characteristics that fall well within the bounds of the current design basis threat statement for radiological sabotage. Therefore, an increase in the number of reported events by itself does not warrant a change to the design basis threats.

8. *Excerpt:* While there has not been an identified international terrorist threat as yet against domestic licensed reactors, terrorists have been responsible for more than one-third of non-U.S. reactor incidents in the period 1970-1984. As was demonstrated by the arrest in 1986 of several individuals associated with the Syrian Socialist National Party while attempting to smuggle explosives into the United States, the existence of an undetected, international terrorist threat in the United States today is a possibility which cannot be discounted. (p. 11)

Response: The first sentence refers to examples of the kinds of events that are under continuing review by threat evaluators at NRC.

The NRC agrees with the comment in the second sentence: "[that the] international terrorist threat in the United States today is a possibility that cannot be discounted." The NRC differs from the petitioners only in the details and level of response. The NRC believes that vigilant evaluation of terrorist activities, supported by current protection levels and contingency planning for even stronger protection, constitutes an adequate response.

Incidentally, the explosive involved in the cited smuggling incident was contained in a hand-carried satchel and was of a small quantity.

9. *Excerpt:* The use of truck bombs has become a tactic of choice for terrorists. The tactic is a grave threat to civilian power plants. (p. 10)

While this Petition focuses primarily on truck bombs, it is also essential to protect against boat bombs. Many nuclear power plants are located adjacent to water and are thus at risk from attack by boat. (p. 10)

Response: Truck bombs with explosive mass sufficient to pose a challenge to power reactors have been used in the Middle East. In the U.S. there has been only one known incident of a large truck bomb [Mat Lab, Wisconsin, (1970)]. There is no information that a group currently exists within the U.S. that has both the capability and

motivation to carry out a truck (or boat) bomb detonation sufficiently near a power reactor which could cause significant damage. Although the likelihood of a truck bomb event is considered to be too low to warrant a change in the design basis threat for radiological sabotage, contingency plans were put in place as a prudent response. The likelihood of a boat bomb is considered to be much less than that of a truck bomb, which itself is only a remote possibility. Accordingly, a requirement for protection against boat bombs is considered unjustified.

10. *Excerpt:* * * * in Western Europe, nuclear power plants are protected against truck bombs by reinforced fences and walls. (p. 11)

Response: The NRC participates as a member of the interagency U.S. Physical Protection Review Team, which conducts technical exchanges of policies, practices and procedures for physical protection of nuclear material and facilities with foreign governments that receive U.S. origin nuclear material. The information derived from exchanges is classified (foreign government restricted information). Accordingly, the NRC cannot discuss specific safeguards planning or programs used by foreign entities. However, there is general agreement between the U.S. and its nuclear trading partners regarding the level of physical protection that is prudent for operating power reactors. All parties commit to the physical protection criteria recommended by the International Atomic Energy Agency in its publication INFRC/225 Rev. 2, and many, including the U.S., go beyond these minimum provisions.

11. *Excerpt:* Although the Commission has been aware of this threat [truck bomb] at least since 1963, nonetheless it has not responded sufficiently to date. (p. 11)

As early as 1964, the Commission staff recommended modification of the design basis threat to include the use of truck bombs by an adversary, noting, "The use of a vehicle bomb against a nuclear facility is a feasible form of attack." (p. 11)

The Commission's response to the recognized truck bomb threat has been woefully deficient. While a Commission 1984 survey of the Defense Department, the Secret Service, the State Department, and the Department of Energy found that "[a]ll four agencies believe that the 'truck bomb' threat in the U.S. is sufficient to prompt action" and had "implemented measures to counter the threat," * * * the Commission only determined at that time to study the issue and delay action. (p. 15)

Some six years after identification of the threat, on April 28, 1989, the Commission finally responded by doing no more than issuing a "Generic Letter" (No. 89-07) which calls for licensees to develop "contingency plans" to deal with the truck bomb threat,

based upon a contractor report. The Generic Letter does not require licensees to plan any permanent measures against vehicle bombings, even though it is far from clear whether licensees will have sufficient warning time of a particular terrorist action to implement effective contingency plans. (p. 16)

The truck bomb threat is not likely to disappear. Short-term expedients, such as those reflected in Generic Letter No. 89-07, simply do not adequately address this threat, either for the near or longer term. (p. 16)

Response: NRC's design basis threats serve three purposes. They are used to develop regulatory requirements, they provide a standard with which to measure changes in the real threat environment, and they provide a standard for evaluation of implemented systems. The 1963 bombings in the Middle East were clearly beyond the capabilities attributed to the design basis threats, and this recognition triggered NRC staff action.

A first step was to determine the effects of large scale explosive attacks on licensed facilities including power reactors. Before the results of the study were known, but with general awareness of the damage high explosives can cause to structures, the NRC safeguards staff concluded that, to be prudent, an immediate effort was warranted, including the development of protection requirements, defensive strategies, and guidance on vehicle barriers. This action was being taken while the U.S. intelligence agencies were gathering and assessing intelligence information on the origin and geographic extent of this new type of threat, as well as the kinds and quantities of explosives involved. Subsequently, based on information received from these intelligence agencies, it quickly became apparent that the threat of vehicle bomb attacks in the continental U.S. was not imminent, and NRC staff resources were redirected away from immediate regulatory actions to a broader based assessment of the entire issue. The truck bombings in the Middle East occurred in nations experiencing armed civil unrest, a situation not prevalent in the U.S. Subsequently, the truck bomb threat in the U.S. was evaluated in depth and alternatives for dealing with it were developed. None of the information developed was interpreted as indicative of a need for immediate action; also, permanent measures were considered but were deemed inappropriate. Power reactor licensees were required by Generic Letter 89-07 to develop contingency plans for providing protection against truck bombs under short notice, and to confirm in writing that they had included the threat of a vehicle bomb in their contingency

planning. The NRC staff verified that confirmations were received from licensees that these contingency plans had been developed. Temporary Instruction 2515/102 (TI 2515/102), "Land Vehicle Bomb Contingency Procedures Verification," was issued on November 29, 1983. The purpose of TI 2515/102 was to provide policy guidance for NRC regional staff to verify that power reactor licensees have performed the contingency planning required by Generic Letter 89-07. The objective of TI 2515/102 was to verify that the licensee's contingency planning considered short-term actions that could be taken to protect against attempted radiological sabotage involving a land vehicle bomb if such a threat were to materialize. Inspections were completed at all operating power reactor sites. For each power reactor site, NRC inspectors verified that the licensee's safeguards contingency procedures addressed the ability to respond to an NRC request to implement short-term contingency measures and the licensee has determined that any resources or equipment needed to implement short-range contingency measures would be available.

As noted in the petition, the NRC consulted with the Defense Department, the Secret Service, the State Department, and the Department of Energy. The NRC considered the extent of the protective measures they implemented in relation to the protective measures that were already in place at power reactors. The consultations were conducted as an informal information gathering by the NRC staff. It was realized at the time of the consultations that the agencies contacted did not, in most cases, have targets analogous to those protected under NRC regulation or with comparable consequences to a postulated truck bomb attack. Because of this, it was judged reasonable that Federal agency response to the truck bomb issue might be agency-specific. Nothing was found that called for immediate additional measures to protect against truck bombs at power reactors. The NRC threat evaluation staff remains vigilant in its continuing search for indications of a truck bomb threat. The NRC continues to believe that, since the likelihood of such events is considered to be so low, the actions taken constitute an appropriate response.

12. *Excerpts.* The Commission's failure to protect against truck bombs at power plants stands in contrast to its approach for protecting fuel facilities. Almost three years ago, the Commission determined it was appropriate to alter the design basis threat for theft to include use of land vehicles by

potential adversaries attempting to commit a theft. * * *. Such asymmetry is nonsensical. Logically the Commission cannot acknowledge "the possible use of land vehicles for breaching of perimeter barriers"—precisely the *modus operandi* of a potential truck-bomb attacker—without acknowledging the possibility of such an attack at licensed reactors. (p. 17)

The current standard is somewhat ambiguous because it does not specifically include a reference to vehicular support, i.e., attackers arriving by means other than foot. Chairman Zech stated during the 1988 oversight hearings: "NRC's design basis threat includes any mode of transportation—any mode of transportation—to get to the site, or through the perimeter barrier. Our design basis threat assumes any mode that could get through the barrier—car, boat, truck or another method of transportation." * * *. Plainly the design basis threat itself should explicitly recognize this prospect. (p. 19)

Response. The NRC distinguishes between (1) theft of high enriched uranium from a fuel facility and (2) radiological sabotage of a power reactor. As discussed under the response to Excerpt No. 5, the theft might support an illicit nuclear explosive device with the potential for higher consequences than those from radiological sabotage. An illicit nuclear explosive device would be portable and could be directed against a heavily populated area or be directed against a seat of government and detonated at a time selected for maximum explosive effect. An adversary contemplating theft would be prepared and equipped differently from how he or she would be if contemplating radiological sabotage. The combination of these factors and other considerations (described below) leads to a design basis threat for theft that differs from that for radiological sabotage.

Because it could be used in an illicit nuclear explosive device, significant quantities of special nuclear material (such as high enriched uranium) must be protected rigorously against theft. This material exists at certain facilities administered by the Department of Energy (DOE) and at certain facilities licensed by the NRC. The two agencies coordinate to carry out a policy of maintaining fully adequate and essentially equivalent safeguards systems. During 1988, this policy led the NRC to revise its design basis threat for theft of materials from high enriched fuel facilities to include land vehicles used for transporting personnel, and their hand-carried equipment.

A comparability review of the protection programs for power reactor facilities has not been conducted because DOE defense-related reactors are fundamentally different from

commercial units in siting, function, design, size, nuclear fuel used, safety systems, and operations.

All power reactors operating in the U.S. use low enriched fuel. There is no high enriched uranium at these sites. Thus, vehicle denial barriers are not required to protect against theft at operating power reactor sites.

The NRC interpretation of the design basis threat for radiological sabotage of reactors does not preclude adversaries' use of vehicles, other than truck bombs, for transportation and for breaching protected area barriers. The interpretation also allows for boats (other than boat bombs) for transportation and for breaching the barriers. The protection system is designed independent of the type of surface vehicle. The vehicle, whatever its type, would be detected by intrusion alarms when it crosses the barrier. No delay time is credited for the barrier. In response to positions taken by the petitioner and supported by some commenters, one could modify the design basis threat to express this interpretation. The modification, however, would not affect the high level of protection already provided.

13. *Excerpt.* Such protections against truck bombs can be achieved at relatively low cost. The Commission estimated in 1986, for example, that a vehicle denial system for roadway access would cost only about \$100,000–\$200,000 per facility to install and \$10,000–\$20,000 annually to maintain, while a perimeter access denial system would only cost \$500,000–\$1,000,000 per facility to install and \$25,000–\$50,000 annually to maintain. * * *. Indeed, the price of protection seems small and well worth it, considering the catastrophic consequences that could be associated with successful sabotage, including significant offsite radioactive releases and the crippling of a power plant. (p. 18)

Response. Among the issues considered by the NRC during its deliberations on the vehicle bomb were the provisions of the Commission's backfit rule. The rule states in 10 CFR 50.109(a)(3) that the Commission can require backfitting when it determines that there is a substantial increase in the overall protection of the public health and safety or the common defense and security to be derived from the backfit, and that the direct and indirect costs of implementation for that facility are justified in view of this increased protection. Contrary to the belief of the petitioner and supported by some commenters, the NRC concluded that the vehicle denial system referred to in this excerpt would not provide a substantial increase in the overall

protection of the public health and safety. Cost was not a deciding factor.

Incidentally, the dollar values stated by the petitioner for perimeter access denial are not representative of the costs of providing standoff distances beyond the existing protected area, as could be required to assure protection against "explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system, in quantities transportable by vehicle." (Page 22, the Petition.) In some cases, significant additional expenditures would be necessary for (in certain cases) purchase of land, relocation of roads and parking lots, additional length of barrier structures, and means to monitor the integrity of the barrier. These factors could add substantially to the costs stated for the perimeter system.

VI. Statement of Denial

The Commission has considered the petition, the public comments, and the NRC staff evaluation set forth in this notice. The Commission concludes that there has been no change in the domestic threat since the design basis threat was adopted that would justify a change in the design basis threat. Accordingly, the petitioners' request to modify the design basis threat for radiological sabotage as set forth in 10 CFR 73.1 is hereby denied.

Dated at Rockville, Maryland, this 5th day of June 1991.

Samuel J. Chalk,

Secretary of the Commission

Appendix--Listing of Sabotage and Attack Threats to NRC Licensees for the Period August 2, 1990--February 21, 1991

1. Date: 05/26/90

Site: Maine Yankee, Maine Yankee Atomic Power Company, Lincoln County, ME.

Source: Licensee's Corporate Office

Threat: At 3:40 p.m., an unsubstantiated bomb threat was received at the corporate office.

Action: The Maine State Police, the Augusta Police, and the FBI were notified.

Resolution: Licensee and the police determined the threat was noncredible. No further action due to the vagueness of the threat.

2. Date: 10/22/90

Site: Georgia Nuclear Plants

Source: DeKalb County Sheriff's Office through the FBI

Threat: An anonymous female telephoned the DeKalb County Sheriff's Office at the Courthouse in Decatur, Georgia, and provided a partially unintelligible message regarding an alleged kidnapping that occurred at Stone Mountain, Georgia, on an unspecified date. The brief message was "covered"

by the Sheriff's Department Radio traffic, making the name of the alleged victim undistinguishable. The caller stated that if the unknown victim was not returned to Stone Mountain, "they would ignite" a nuclear power plant in Georgia. The nuclear power plant to be targeted was not specified (NRC-licensed facilities in Georgia include Hatch 1 and 2 and Vogtle 1 and 2).

Action: No action required.

Resolution: The Sheriff's department believes the kidnapped individual may refer to someone incarcerated in the Stone Mountain Correctional Facility, a medium security state penitentiary located in Stone Mountain, Georgia. The FBI plans no further action.

3. Date: 12/25/90

Site: Vermont Yankee, Vermont Yankee Nuclear Power Corporation, Windham County, VT

Source: Governor-elect of Vermont

Threat: At 5:40 p.m., the Governor-elect of Vermont received a telephone call from a male who stated that the Iraqi government was going to blow up the Vermont Yankee nuclear power plant.

Action: The licensee was notified through the state and local police and, as a precautionary measure, increased security at the facility. Other nuclear plants in the Yankee system were also notified.

Resolution: The licensee and police determined the threat was noncredible.

4. Date: 01/06/91

Site: Trojan

Source: Bonneville Power Authority (BPA)

Threat: BPA received a letter from a woman who stated that "In the new world God would destroy dams, coal-fired plants, oil-fired plants, and nuclear power plants. PGE is the devil and will be destroyed by God within three months."

Action: BPA notified the Portland General Electric Company load dispatcher who, in turn, notified the Trojan Plant Superintendent.

Resolution: The licensee determined the threat was noncredible. The letter writer was known by the Oregon police to be mentally ill and no threat to security.

5. Date: 01/10/91

Site: Transmission line

Source: Consumers Power

Threat: NCR Region III was notified by Consumers Power, that the Canadian Power Control had received a telephonic bomb threat to destroy the new transmission line from Detroit Edison (owner) to Ontario Hydroelectric. The bomb was set to go off in 16 hours.

Action: The FBI was notified and Detroit Edison was contacted.

Resolution: No bomb was found.

6. Date: 01/12/91

Site: Hatch, Georgia Power Company, Appling County, GA

Source: Georgia Power Company

Threat: NRC Region II received a call from Georgia Power advising that at 12:20 a.m. on January 12, 1991, an individual drove up to Hatch's Gate 1 (owner-controlled area) in a 18-wheeler and asked to see a

plant operator regarding a private business dealing. When told the operator would not be at work until January 15, 1991, the driver stated he would be back. After he got in the truck he stated, "... if I pulled the wires to disable the vehicle and loaded it with explosives, I could do something."

Action: The local law enforcement agency and the FBI were notified.

Resolution: On January 16, 1991, the driver was identified, and his name was given to the Sheriff's office. He was arrested on unrelated theft charges. No further action was planned by the licensee.

7. Date: 01/15/91

Site: Palo Verde, Arizona Public Service Company, Maricopa County, AZ

Source: Corporation Offices, Phoenix, AZ

Threat: At 8:15 a.m., the switchboard operator at the Corporation Offices, Phoenix, Arizona, received a call from a male, believed to be 30-40 years old, who stated, "I'm going to blow the place sky high."

Action: No action taken.

Resolution: Licensee determined the threat was noncredible.

8. Date: 01/15/91

Site: Brunswick, Carolina Power and Light Company, Brunswick County, NC

Source: Brunswick Nuclear Power Visitors Center

Threat: At 11:06 a.m., the Brunswick Nuclear Power Plant Visitors Center received a call from a male, believed to be Southern, who said in a raspy voice, "You had better evacuate the plant because we are going to blow up Sunny Pt. (military, non-nuclear facility located near Brunswick) today."

Action: Brunswick and Sunny Pt. facilities were notified, as well as the FBI.

Resolution: Licensee determined the threat was noncredible.

9. Date: 01/15/91

Site: Wolf Creek, Kansas Gas and Electric Company, Coffey County, KS

Source: Kansas Bureau of Investigation

Threat: At 2:30 p.m., the licensee was notified by the Kansas Bureau of Investigation that they were called by a female with secondhand information that someone of Iraqi descent worked at Wolf Creek, and if his country is invaded, he will sabotage the plant.

Action: The FBI was notified.

Resolution: Security of vital equipment was heightened. Result of licensee investigation was negative.

10. Date: 01/16/91

Site: Davis-Besse, Toledo Edison Company, Ottawa County, OH

Source: Licensee

Threat: At 9:45 a.m., the licensee reported that what appeared to be a bomb (three sticks of unknown material, no power source, and no timing device) had been found in a cabinet drawer in a maintenance building which is physically removed from any vital areas but within the protected area.

Action: Site security responded and reported it appeared to be a hoax, but the response continued as if

- precautionary measure. Local law enforcement officials responded, and the FBI was notified.
- Resolution: At 11:14 a.m., the object was identified by the licensee as a "security training device" made by one of the security officers.
11. Date: 01/16/91
 Site: McGuire, Duke Power Company, Macclenburg County, NC
 Source: Duke Power
 Threat: Duke Power called KII to deny rumors circulating in North Carolina that McGuire was under attack by Iraqis.
 Action: FBI was notified.
 Resolution: Rumors were false.
12. Date: 01/17/91
 Site: Brunswick, Carolina Power and Light Company, Brunswick County, NC
 Source: Licensee
 Threat: At 1:26 a.m., the licensee received an anonymous telephone call from an individual on an outside line who said, "Want you people to know 600 hours, it will go off. Two C-4 planted and they will go off."
 Action: The FBI was notified. The licensee conducted a search with negative results.
 Resolution: The licensee determined the threat was noncredible.
13. Date: 01/22/91
 Site: Byron, Commonwealth Edison Company, Ogle County, IL
 Source: Commonwealth Edison Company
 Threat: The Rock River Division (Commonwealth Edison) received an anonymous telephone call which threatened a bomb explosion at Byron in seven minutes. Earlier in the morning, Rock River received another anonymous telephone call which threatened a bomb attack against a substation in Rockford, Illinois.
 Action: A search was conducted with negative results.
 Resolution: The licensee determined the threat was noncredible. The caller was identified as an unstable personality who had made seven or eight calls over several days to non-utility facilities. A warrant has been issued for his arrest.
14. Date: 01/23/91
 Site: Browns Ferry, Tennessee Valley Authority, Limestone County, AL
 Source: Tennessee Valley Authority
 Threat: At 11:45 a.m., the main TVA switchboard in Chattanooga, Tennessee, received a call from an unidentified male who stated, "A black Cadillac or a Nissan truck is on the way to Browns Ferry with a bomb."
 Action: The FBI was notified. The licensee maintained heightened awareness.
 Resolution: The licensee determined the threat was noncredible.
15. Date: 01/23/91
 Site: San Onofre, Southern California Edison Company, San Diego County, CA
 Source: California State Highway Patrol, Oceanside
 Threat: At 8:50 p.m., the California State Highway Patrol, Oceanside, received a call from an individual who stated, "There is a bomb at San Onofre."
 Action: The Sheriff's Office and San Onofre were notified. The licensee closed all but the south gate, searched vehicles at the south gate, and heightened security. The Sheriff's Department dispatched a patrol car with bomb-sniffing dogs to the site. The FBI was notified.
 Resolution: The FBI determined the threat was noncredible and notified the licensee.
16. Date: 01/23/91
 Site: Zion, Commonwealth Edison Company, Lake County, IL
 Source: Zion Police Department
 Threat: The Zion Police Department received a telephone call from an individual who stated, "There's a bomb planted at the local McDonald's." A short time later, a second call stated, "I see you're not doing anything about the bomb at McDonald's or the one at the Zion Nuclear Power Plant."
 Action: The FBI was notified.
 Resolution: The licensee and the police determined the threat was noncredible.
17. Date: 01/23/91
 Site: Turkey Point, Florida Power and Light Company, Dade County, FL
 Source: Dade County Metropolitan Police Department
 Threat: During the evening, Dade County Metropolitan Police Department received an anonymous call from an individual who stated he was with "Iraqi International" and an airplane would bomb Turkey Point at 8 p.m.
 Action: The call was traced to a pay telephone at a K-Mart, but no suspect was identified. The Dade Police notified the licensee. The FBI was notified.
 Resolution: The licensee and the police determined the threat was noncredible.
18. Date: 01/24/91
 Site: Consolidated Edison Corporate Office, New York
 Source: New York City Police Department
 Threat: At 1:50 p.m., the New York City Police Department advised that they received a call from an individual who stated that a bomb would go off in ten minutes on the 2nd floor of the Consolidated Edison Corporate Offices.
 Action: A search was conducted with negative results.
 Resolution: No mention was made of an NRC-licensed facility.
19. Date: 01/25/91
 Site: Turkey Point, Florida Power and Light Company, Dade County, FL
 Source: AT&T
 Threat: At 11:05 a.m., AT&T received a call from a male with a foreign accent, who said he needed nails and a hammer to bomb the Turkey Point plant.
 Action: AT&T traced the call to a local residence in Hollywood, Florida. The licensee contacted the local law enforcement agency and the FBI.
 Resolution: The local law enforcement agency investigation determined the call was made by an 18-year-old as a prank.
20. Date: 01/25/91
 Site: Oregon State University, Oregon
 Source: The University
 Threat: At 9 a.m., the University received a general bomb threat which stated, "Bombs will go off at several places, including Oregon State University."
 Action: The reactor was shut down. A search was conducted with negative results.
 Resolution: The University determined the threat was noncredible.
21. Date: 01/25/91
 Site: Davis-Besse, Toledo Edison Company, Ottawa County, OH
 Source: Licensee
 Threat: NRC Region III was notified that an individual walked into the Edison Plaza Shopping Center, Toledo, Ohio, and threatened to kill all Toledo Edison employees and destroy Toledo Edison equipment.
 Action: FBI notified.
 Resolution: The individual was known to the local police as he had made previous threats. The licensee filed a complaint, a warrant was issued, the man was arrested and jailed.
22. Date: 01/30/91
 Site: Limerick, Philadelphia Electric Company, Montgomery County, PA
 Source: Licensee
 Threat: At 1:48 p.m., the switchboard, in a nonprotected area, received a telephone call from an anonymous individual who said, "I put a bomb there that's going to blow up."
 Action: The local police were notified. A search was conducted with negative results.
 Resolution: The caller was believed to be a boy, about 8-9 years old. The licensee and police determined the threat was noncredible.
23. Date: 01/31/91
 Site: Manhattan College, New York
 Source: Manhattan College
 Threat: At 12 noon, an anonymous bomb threat was received against a building at Manhattan College, Riverdale, New York, housing a nonpower reactor.
 Action: The local police department responded. A search was conducted with negative results.
 Resolution: The College and police determined the threat was noncredible.
24. Date: 02/04/91
 Site: Arkansas, Arkansas Power and Light Company, Pope County, AR
 Source: FBI Office, Little Rock, Arkansas
 Threat: The FBI Office, Little Rock, Arkansas, received an anonymous telephone call from an individual who stated that Arkansas Nuclear One was going to be hit.
 Action: The licensee was notified and increased security.
 Resolution: FBI determined the threat was noncredible.
25. Date: 02/06/91
 Site: San Onofre, Southern California Edison Company, San Diego County, CA
 Source: Licensee
 Threat: Sometime between 4 p.m. on February 5, 1991, and 7:30 a.m. on February 6, 1991, the licensee recorded a message on an answering machine which said, "The whole place is going to blow up today."
 Action: The FBI was notified. A copy of the tape was provided to the FBI.

Resolution: The FBI determined the threat was noncredible.

26. Date: 02/14/91

Site: Cooper, Nebraska Public Power District, Nemaha County, NE

Source: Sheriff, Auburn, Nebraska

Threat: The local sheriff in Auburn,

Nebraska received an anonymous bomb threat against the local hospital and against Cooper which said, "A bomb will go off in 29 minutes. . . ."

Action: A search was conducted with negative results.

Resolution: The licensee determined the threat was noncredible.

27. Date: 02/19/91

Site: U.S. Embassy, Ottawa, Canada

Source: FBI

Threat: The U.S. Ambassador received an anonymous threat letter that alluded to various illegal activities such as drug dealing and prostitution and contained threats against the U.S., including a threat of retaliatory kamikaze air crashes into U.S. nuclear power plants by explosive laden planes, if Iraq was invaded by U.S. forces.

Action: The Royal Canadian Mounted Police (RCMP) and the FBI were notified.

Resolution: The RCMP and the FBI determined through their investigation that the threat against nuclear facilities was noncredible.

28. Date: 02/21/91

Site: University of Utah, Utah

Source: Local Police Department

Threat: At 7:05 a.m., the local police department notified the University of a bomb threat against the Merrill Engineering Building. The threat was not directed against the Triga reactor which is located on the first floor.

Action: A search was conducted with negative results.

Resolution: The licensee and police determined the threat was noncredible.

[FR Doc. 91-13805 Filed 6-10-91; 8:45 am]

BILLING CODE 7540-01-01

Before the
UNITED STATES NUCLEAR
REGULATORY COMMISSION
Washington, D. C. 20555

IN THE MATTER OF PROPOSED)
INSTITUTION OF INDIVIDUAL)
PLANT EXAMINATION PROGRAM)
TO EVALUATE THE MARGIN OF)
NUCLEAR POWER REACTORS TO)
WITHSTAND SAFEGUARDS EVENTS)
BEYOND THE CURRENT DESIGN)
BASIS)
_____)

DOCKET NO. _____

TO: EXECUTIVE DIRECTOR FOR OPERATIONS

REQUEST FOR ACTION

Pursuant to 10 C.F.R. § 2.206, the Nuclear Control Institute ("NCI") and the Committee to Bridge the Gap ("CBG") (collectively, "Petitioners") request the U.S. Nuclear Regulatory Commission (the "Commission" or the "NRC") to institute an individual plant examination program, under which it would request nuclear power plant licensees (a) to assess the ability of each licensed facility to withstand an attack by explosives-laden surface vehicles ("truck and boat bombs") and by a larger number of attackers using more sophisticated weapons than contemplated in the current design basis threat, and (b) to report to the Commission any plant-specific vulnerabilities identified in this assessment that imply that the specific facility may be particularly vulnerable, in the sense that its margin to withstand attacks above the current design basis threat

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is not large, or perhaps does not exist. The interests of NCI and CBG in this matter and the rationale for the program they propose are set forth below.

I. The Interests of Petitioners

NCI is a non-profit corporation, organized and existing under the laws of the District of Columbia, with its principal place of business at 1000 Connecticut Avenue, N.W., Suite 704, Washington, D.C. 20036. NCI is an independent policy research center that was established in 1981 to monitor nuclear programs in the United States and other countries. It develops strategies for preventing the spread and reversing the growth of nuclear armaments. In particular, it seeks to increase understanding by policymakers and the public of risks associated with introducing into civilian nuclear programs the materials essential to building nuclear weapons. Also, NCI explores approaches to reducing the existing nuclear arsenals that are helpful to prevention of nuclear proliferation and terrorism. In 1985, along with the State University of New York Institute for Studies in International Terrorism, NCI sponsored a multi-disciplinary, internationally-attended Conference on nuclear terrorism and thereafter created an International Task Force on Prevention of Nuclear Terrorism, comprised of 26 experts from nine countries. These initiatives resulted in two books: Leventhal and Alexander, eds., Nuclear Terrorism: Defining the Threat

(Pergamon, 1986), and Leventhal and Alexander, eds., Preventing Nuclear Terrorism (Lexington, 1987). Among other matters, the 150 participants in the Conference and the 26 Task Force members identified deficiencies and urged improvement in protections against sabotage at reactors and other nuclear facilities.

CBG is a non-profit corporation, organized and existing under the laws of the State of California, with its principal place of business at 1637 Butler Avenue, Suite 203, Los Angeles, California 90025. CBG engages in public policy advocacy and research, and it is particularly concerned with nuclear safety and the threat of nuclear terrorism. As an intervenor in a Commission proceeding (Docket No. 50-142), CBG successfully challenged the relicensing of one reactor based in part on weaknesses in site security. As one result of CBG's efforts to enhance security, barriers to vehicular access were temporarily installed at the site during a period of particular tension. CBG has continued to seek improvements in reactor safety and security, including, in particular, the elimination of unnecessary use of weapons-grade reactor fuel.

Both NCI and CBG joined in a Petition for Rulemaking to the Commission on January 11, 1991 (PRM-73-9), seeking an upgrade in the design basis threat for radiological sabotage of nuclear reactors as currently set forth in 10 C.F.R. § 73.1. The

Commission denied this Petition on June 11, 1991 (56 Fed. Reg. 26782).¹

II. The Rationale for the Request

Even though the Commission has denied the NCI/CBG Petition for Rulemaking, Petitioners believe that action short of a change in the design basis threat for radiological sabotage remains appropriate. They submit, in particular, that the Commission should institute an individual plant examination program for terrorist-induced events similar to that being carried out for inadvertent accidents beyond the design basis.

(a) The IPE Program

Several years ago, in its Severe Accident Policy Statement, the Commission made two important findings concerning inadvertent accidents: first, "On the basis of currently available information, ... that existing plants pose no undue risk to public health and safety and ... [there is] no present basis for immediate action on generic rulemaking or other regulatory changes for these plants because of severe accident risk;" and, second, based on NRC and industry experience with plant-specific

¹/ Petitioners' concurrent request for emergency implementation of utility contingency plans was denied by the Director of the Office of Nuclear Material Safety and Safeguards on January 15, 1991 (DD-91-1).

probabilistic risk assessments ("PRAs"), that it is prudent to implement "a systemic safety evaluation of existing plants to determine whether particular accident vulnerabilities are present and what cost-effective changes are desirable to ensure that there is no undue risk to public health and safety."²

In the area of inadvertent accidents, this Commission Policy Statement led to the NRC's "Individual Plant Examination" ("IPE") Program, embodied in Generic Letter 88-20 (November 23, 1988), under which plants are evaluating their ability to withstand accident scenarios that could arise but are beyond the design basis under which the plants are currently licensed. This Program has recently been expanded to include severe accidents generated by external events such as earthquakes, fires, tornadoes, floods and transportation and nearby facility accidents.³ Generic Letter 88-20 is an information request under 10 C.F.R. § 50.54 (f). To satisfy this information request, individual licensees will be performing and submitting to the NRC plant-specific analyses that will examine potential accident scenarios beyond the current design basis; identify plant-specific issues that could represent potential vulnerabilities; and indicate any available modifications that could enhance each plant's overall safety.

²/ 50 Fed. Reg. 32138 (August 8, 1985).

³/ Generic Letter 88-20, Supplement #4, 56 Fed. Reg. 33310 (July 19, 1991).

The IPE Program will have four explicit benefits. First, plant-specific issues will be identified beyond the design basis; these are issues for which, despite the fact that a plant meets all current regulatory requirements, an upgrade may be desirable. Second, an overall assessment will be made as to how much "margin" exists beyond the design basis for each plant.⁴ Third, where remedies to increase the plant-specific margin are identified in a given area, an assessment will be feasible as to whether available remedies make sense, with the judgment to be made first by the licensee using its own criteria, and later by the NRC using existing Commission backfit policies. Fourth, individual licensees will have achieved a significantly better appreciation for severe accident (beyond-the-design-basis) behavior at their plants.

An unstated but obvious fifth benefit of the IPE Program will be an assessment of the adequacy of the NRC's own safety regulations. Specifically, if generic trends emerge from the plant-specific findings indicating that the NRC's existing regulations are inadequate, then a basis will exist for modifying these regulations.

⁴/ This assessment will in fact be done for each key area of safety protection, such as for loss-of-offsite-power transients, medium-sized loss-of-coolant transients, loss-of-chain-reaction-shutdown transients, and so on.

(b) The Need for an IPE-Type Evaluation of Beyond-
The-Design-Basis Safeguards Events

Like the risk of accidents beyond-the-design-basis, there is a risk from terrorist activities beyond-the-design-basis. The time is ripe today for an analogous IPE-type evaluation of this risk, emphasizing beyond-the-design-basis threats such as vehicle bombs and attacks by a larger number of attackers using more sophisticated weapons than contemplated in the current design basis threat.

The NRC recently affirmed that it is generally confident as to the existing level of protection from terrorist threats. Thus, it stated, in response to a question from Representative Markey, "The possibility that there could be damage recognizes that the current configuration at sites varies and does not protect against all conceivable vehicle bomb attacks, although the massive structures and redundant safety systems that enable reactors to withstand floods, tornadoes, and earthquakes would provide some inherent protection against the damage from a vehicle bomb....[T]he Commission is confident that existing site and plant characteristics and security systems provide a varying but general capability for successfully thwarting a truck bomb attack".⁵ This statement, however, reflects an acknowledgment by

⁵/ Letter from James Curtiss, Acting Chairman, to Congressman Edward J. Markey, dated April 16, 1991 (emphasis added).

the Commission that the actual level of protection inherent in the structures and safety systems varies from plant-to-plant and that the level of physical protection inherent in security systems is likewise variable. Moreover, the Commission can and must recognize that threats can change with time, perhaps rapidly if a terrorist group with the motivation to do so comes into possession of an advanced technology beyond the current design basis. In such circumstances, it is clear that the the ongoing IPE Program would be a very useful and cost-effective point-of-departure for a similar evaluation of terrorist threats. Indeed, it is not only desirable but entirely feasible and inexpensive to carry out such an evaluation.

The examination Petitioners suggest would analyze the existing plant-specific capability to resist threats beyond the current design basis. Specifically, using the PRA-type models developed in the IPE for plant systems, their interdependencies and relationships, and the way the plant equipment and personnel respond when one or another system or function is compromised, and using the spatial-collocation information developed for the flood-IPE and fire-IPE examinations, an analysis can readily be accomplished to demonstrate whether the compromise of certain collocated equipment from a terrorist attack still leaves adequate capability to shut down the plant and maintain it in a secure state.

To accomplish an IPE-type vulnerability search, it will be necessary for the NRC to specify a few specific beyond-the-design-basis threats, define each one's characteristics, and request that each individual nuclear power plant's licensee analyze the plant's ability to withstand each such threat. This is directly analogous to the seismic-margin-review method that NRC has endorsed for the seismic part of the IPE, in which the NRC has specified the beyond-the-design-basis threat (the so-called "Review Level Earthquake") that an individual plant must use as a tool to evaluate the plant's ability to withstand beyond-the-design-basis earthquakes generally.

An IPE-type examination for safeguards events would accomplish five desirable objectives, analogous to those cited above for the current IPE Program for examining vulnerabilities from inadvertent accidents. First, plant-specific issues will be identified beyond the design basis; these are issues for which, despite the fact that a plant meets all current regulatory requirements for the design basis threat, an upgrade may be desirable. Second, an overall assessment will be feasible as to how much "margin" exists beyond the design basis for each plant. In the context of terrorist threats, this assessment can help determine whether a given plant does in fact possess adequate features to shut down safely after an act such as a vehicle-bomb

attack.⁶ Third, where remedies to increase the plant-specific margin are identified in a given area, an assessment will be feasible as to whether available remedies make sense, with the judgment to be made first by the licensee using its own criteria and later by the NRC using existing Commission backfit policies. Fourth, individual licensees will have achieved a significantly better appreciation for large (beyond-the-design-basis) terrorist threats at their plants. Fifth, the effort will produce an assessment of the adequacy of the NRC's own safeguards regulations against terrorist threats. Specifically, if generic trends emerge from plant-specific findings indicating that the NRC's existing regulations are inadequate, then a basis will exist for modifying these regulations.

Today, the capability to perform PRA-type analysis is widespread, and the Commission's staff uses PRA-type methods and insights for a very wide variety of purposes. Most importantly, PRA methods can enable the evaluation of whether specific design features, such as redundancy and diversity of safety-shutdown functions and systems, and existing operator procedures and training, are adequate in the face of a terrorist-induced compromise of any given set of systems and functions, including

⁶/ This assessment should be done for potential terrorist damage to each key area of safety protection, such as for loss-of-offsite-power transients, medium-sized loss-of-coolant transients, loss-of-chain-reaction-shutdown transients, and so on.

not only front-line systems but support systems as well. If vulnerabilities are identified by a plant-specific analysis, it is likely that most or all of them can be eliminated or their effects reduced by measures that can be implemented at modest cost.

Of course, PRA-type methods can only be used to assess configuration-type vulnerabilities, and not to quantify, in an absolute sense, the likelihood of a terrorist attack (the "initiating event" in the PRA-type analysis). Nobody can know what the likelihood of such an attack might be. Hence it is not possible to analyze for "core damage frequency" in analogy to how PRAs calculate this same frequency for inadvertent accidents. Rather, the terrorist-threat analysis is best structured to begin with one or more specific beyond-the-design-basis threats, and to analyze each plant's ability to withstand each such threat, in analogy to the structure of the seismic-margin-review methodology now endorsed under the IPE as an appropriate way to search for earthquake-initiated vulnerabilities.

Because PRA-type methods are so powerful, the utilities themselves have almost all adopted PRAs as their chosen method for undertaking their mandated IPE examinations under Generic Letter 88-20. However, as of today these methods have not been widely used for evaluating the adequacy of plant-specific safeguards features against terrorist threats. It is now known

that configurations vary greatly from plant to plant, and therefore that there is a large variation in the extent to which different plants actually possess significant redundancy and diversity in their safety systems and functions beyond the design basis.

While the Commission may believe that in general plants are adequately protected against beyond-the-design-basis terrorist threats such as vehicle-bomb attacks, there can be only an inadequate basis for such a belief for any individual nuclear power plant, until a plant-by-plant examination is performed, analogous to the IPE Program that is studying inadvertent beyond-the-design-basis accidents.

The fact is that today, with over two dozen level-1 PRA studies in the open literature, it would not be difficult for a determined terrorist group with access to PRA expertise to ascertain on a plant-specific basis exactly which systems and functions, taken in combination, would compromise the plant if they could be damaged. Indeed, with PRA becoming a widespread and accepted analytical tool, hundreds of engineers ---not all necessarily responsible or loyal U.S. citizens --- have the basic knowledge to understand these issues.

The further fact is that today, using modern systems-analysis capabilities, it is not difficult for a skilled utility analyst

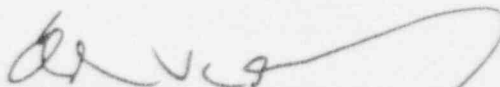
working under IPE-type guidelines suggested here to ascertain whether potential safeguards vulnerabilities might exist. The task for the analyst is to work out which equipment could be compromised by a given threat and whether enough capability remains operable to shut down the nuclear plant and to maintain it in a safe configuration. One of the lessons learned from the PRA literature is that such an analysis is highly plant-specific. The generic insights that could be obtained without plant-specific analysis, if such a generic-type study were done, would probably not have much usefulness, although they might serve as the starting-point for plant-specific analyses of all plants.

Petitioners believe that certain possible types of plant-specific vulnerabilities can be identified with a reasonable degree of particularity. They do not believe, however, that the identification of such vulnerabilities necessarily should be a matter of public record. They hereby advise the Commission that they intend, as soon as this matter is docketed, to submit under seal a list of possible types of vulnerabilities. They submit that the identification of possible types of vulnerabilities is both material and relevant to the Commission's actions on this Request and that a review of such possible vulnerabilities will demonstrate to the Commission the wisdom of applying an IPE-type analysis to beyond-the-design-basis safeguards events.

CONCLUSION

In light of the considerations above, the Commission should adopt a Policy Statement and an information request that asks nuclear power reactor licensees for information analogous to the information request in Generic Letter 88-20 but directed toward beyond-the-design-basis safeguards events rather than beyond-the-design basis inadvertent accidents. Such action, parallel to the Commission's approach to severe accidents, would properly reflect the recognition that, while the Commission may have determined that nuclear power plants have protections in place which are generally adequate, it is nonetheless necessary to gather the requisite information to be able to affirm, on a plant-specific basis, that no significant safeguards vulnerabilities exist.

Respectfully submitted,



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Dated: September 4, 1991
Washington, D. C.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSIONOFFICE OF NUCLEAR REACTOR REGULATION
Thomas E. Murley, Director

ALL NUCLEAR POWER REACTORS

(10 CFR 2.206)

DIRECTOR'S DECISION UNDER 10 CFR 2.206INTRODUCTION

On September 4, 1991, the Nuclear Control Institute and the Committee to Bridge the Gap (Petitioners), filed a Petition in accordance with 10 CFR 2.206 with the U.S. Nuclear Regulatory Commission (NRC or Commission). On September 20, 1991, the Petitioners submitted an Annex to the Petition. The Petition was referred to the Director, Office of Nuclear Reactor Regulation, for consideration.

The Petition asked the Commission to institute an individual plant examination (IPE) program requesting licensees to evaluate the margin of nuclear power plants to withstand an attack by explosives-laden surface vehicles and by a larger number of attackers using more sophisticated weapons than specified in the current design basis threat. The Petition asserts as grounds for this request the following: (1) there is a risk from terrorist activities "beyond-the-design-basis;" (2) the actual level of protection inherent in the structures and safety systems varies from plant to plant and

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that the level of physical protection in security systems is likewise variable; (3) the ongoing IPE program would be a very useful and cost-effective point-of-departure for a similar evaluation of terrorist threats, specifically to demonstrate whether the compromise of certain collocated safety equipment from a terrorist attack still leaves adequate capability to shut down the plant and maintain it in a secure state; and (4) vulnerabilities that are identified can be eliminated or their effects reduced.

On October 7, 1991, I acknowledged receipt of the Petition. I informed Petitioners that (1) the petition would be treated pursuant to 10 CFR 2.206 of the Commission's regulations and (2) appropriate action would be taken in a reasonable time. For reasons discussed below, the Petition is denied.

BACKGROUND

The Petition asked the Commission to institute an IPE program requesting licensees to evaluate the margin of nuclear power plants to withstand safeguards events beyond the current design basis threat. An IPE is a systematic examination of plant design and operation that looks for vulnerabilities to severe accidents and cost-effective safety improvements that reduce or eliminate the important vulnerabilities. The ongoing IPE program has been a key part of implementing the Commission's Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants (50 FR 32138, August 8, 1985). This statement describes the policy the Commission has established to resolve safety issues related to reactor accidents more severe than design basis accidents. The Commission considered the issue of sabotage in developing the severe accident policy statement and did not include sabotage as a potential initiating event to be addressed in evaluating existing plants.

Both the proposed (48 FR 16014, April 13, 1983) and final Policy Statement include the following language:

The issues of both insider and outsider sabotage threats will be carefully analyzed and, to the extent practicable, will be emphasized as special considerations in the design and in the operating procedures developed for new plants. [Emphasis added]

The NRC received no public comments regarding this statement.

To help implement the policy statement, Generic Letter 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities--10 CFR 50.54(f)," dated November 23, 1988, requested that each licensee conduct an IPE for internally initiated accidental events only. On June 28, 1991, the NRC issued Supplement 4 to Generic Letter 88-20, to request that each licensee conduct a systematic IPE for severe accidents initiated by accidental external events (IPEEE). The NRC issued the request for an IPEEE after issuing the request for an IPE to allow the staff to perform additional work to (1) identify which external hazards need to be evaluated, (2) identify acceptable examination methods and develop procedural guidance, (3) coordinate with other ongoing external event programs, and (4) conduct a workshop to explain the IPEEE process and to obtain comments and questions on the draft generic letter supplement and associated guidance document. In the workshop, and as later documented in the IPEEE guidance document (NUREG-1407), the staff specifically stated that sabotage was not to be addressed as part of the IPEEE.

The general purpose of the IPEEE is similar to that of the internal event IPE--that is, that each licensee (1) develop an appreciation of severe accident behavior, (2) understand the most likely severe accident sequences that could occur at its plant under full power operating conditions, (3) gain a qualitative understanding of the overall likelihood of core damage and radioactive material release, and (4) if necessary, reduce the overall likelihood of core

damage and radioactive material release by modifying hardware and procedures that would help prevent or mitigate severe accidents. Consistent with the Commission's severe accident policy statement, neither the IPE nor the IPEEE addressed intentional acts of radiological sabotage.

The Commission's regulations do not require licensees to design safety systems to be resistant to various acts of sabotage, although the diverse and redundant safety systems and structures at nuclear power plants provide some inherent protection against such acts. Instead, 10 CFR 73.55 requires licensees to establish and maintain an onsite physical protection system and security organization designed to protect against the design basis threat of radiological sabotage as defined in 10 CFR 73.1(a)(1). This is accomplished by a combination of detection, interception, and physical protection. The design basis threat is defined in 10 CFR 73.1(a)(1) as:

(i) A determined violent external assault, attack by stealth, or deceptive actions of several persons with the following attributes, assistance and equipment: (A) Well-trained (including military training and skills) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both, (C) suitable weapons, up to and including hand held automatic weapons, equipped with silencers and having long range accuracy, (D) hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or otherwise for destroying reactor, facility, transporter, or container integrity or features of the safeguards system, and (ii) An internal threat of an insider, including an employee (in any position).

This design basis threat provides a standard for judging the adequacy of physical protection systems, analogous to using design basis accidents in judging the adequacy of safety systems. This design basis threat of Part 73 is not an additional standard for judging the adequacy of safety systems pursuant to Part 50 requirements. Rather, Part 73 establishes additional independent requirements to protect against the design basis threat.

To assure itself that this Part 73 design basis threat remains adequate, prudent and reasonable, the staff continually reviews the threat from terrorist activities in the world environment (the "threat environment"). Staff analysis and recommendations are provided to the Commission semiannually. Following incidents in the Middle East in the mid-1980s in which terrorists used explosive-laden vehicles as bombs, the Commission considered if the design basis threat should be changed to include vehicle bombs. The Commission decided that it would not be necessary to change the design basis threat or to require licensees to provide permanent protection measures against land vehicle bombs. However, as a matter of prudence, the Commission issued Generic Letter 89-07, "Power Reactor Safeguards Contingency Planning for Surface Vehicle Bombs," on April 28, 1989. In Generic Letter 89-07, the Commission requested licensees to prepare plans and make advance arrangements to implement, within 12 hours, short-range contingency measures in the event that the threat environment affecting reactors in the U.S. changes in a way that prompts the Commission to determine that protection against a land vehicle bomb threat is appropriate.

The Petitioners previously requested, on January 11, 1991, that the Commission revise its regulations to increase the design basis threat for nuclear power reactors to include explosive-laden vehicles and a larger number of attackers using more sophisticated weapons. On June 11, 1991, the Commission denied the Petition for Rulemaking based on a determination that there has been no change in the threat environment affecting reactors in the U.S. since the design basis threat was adopted, that would justify a change in the design basis threat (56 FR 26782).

DISCUSSION

The current Petition does not present any information or identify any issues that the Commission has not already considered and addressed in its rulemaking activities concerning Sections 73.55 and 73.1(a); policy decisions on severe accidents and the implementing IPE and IPEEE programs; and the denial of the Petitioners' previous request to increase the design basis threat for radiological sabotage. In describing their perception of the need for an IPE for safeguards events, the Petitioners state that there is a risk from terrorist activities beyond the design basis. The NRC recognizes that any design basis threat has some related residual risk. One of the purposes of establishing a design basis threat is to define a policy position on the level of safeguards that is prudent. This issue was previously addressed in the Petition for Rulemaking to revise the design basis threat. In denying that Petition, the Commission stated that it continues to believe that there is no credible threat targeting power reactors in this country (56 FR 26782, 26785, June 11, 1991). The current design basis threat is a hypothetical threat used to develop regulatory requirements, provide a standard against which changes in the real threat environment can be evaluated, and provide a standard which the Commission considers reasonable for evaluating the implementation of safeguards (Ibid, at pages 26785 and 26788).

The Petitioners further state that although the Commission has denied their previous Petition for Rulemaking, action short of a change in the design basis threat for radiological sabotage remains appropriate. The staff notes that, by issuing Generic Letter 89-07, the Commission has already taken prudent action short of a change in the design basis threat regarding surface vehicles laden with explosives.

The Petition states that the actual level of protection inherent in the structures and safety systems varies from plant to plant, that the level of physical protection inherent in security systems is likewise variable and that the ongoing IPE Program would be a useful and cost-effective point-of-departure for similar evaluation of terrorist threats. In describing the proposal for a sabotage IPE, the Petition states the following:

Specifically, using the PRA-type models developed in the IPE for plant systems, their interdependencies and relationships, and the way the plant equipment and personnel respond when one or another system or function is compromised, and using the spatial-collocation information developed for the flood-IPE and fire-IPE examinations, an analysis can readily be accomplished to demonstrate whether the compromise of certain collocated equipment from a terrorist attack still leaves adequate capability to shut down the plant and maintain it in a secure state.

The Petition further states the following:

Of course, PRA-type methods can only be used to assess configuration-type vulnerabilities, and not to quantify in an absolute sense, the likelihood of a terrorist attack (the "initiating event" in the PRA-type analysis). Nobody can know what the likelihood of such an attack might be. Hence it is not possible to analyze for "core damage frequency" in analogy to how PRAs calculate this same frequency for inadvertent accidents.

The NRC has already performed or caused to be performed the PRA-type analyses requested in the Petition. In May 1991, the NRC completed its Regulatory Effectiveness Review (RER) Program which included performing a qualitative fault tree analysis of every operating nuclear power plant. These fault tree analyses use PRA-type models for plant systems, their interdependencies and relationships, and the way the plant equipment and personnel respond when one or another system or function is compromised. These fault tree analyses also use spatial-collocation information to determine areas which, if successfully protected against adversaries, would provide

adequate capability to shut down the plant and maintain it in a secure state. Since it began the RER program in 1981, the NRC has used the results of these analyses in validating each licensee's identification of vital equipment and areas.

Since early 1987, the staff has also used these analyses to identify specific sets of safety equipment which, if lost, would create the most significant challenge to maintaining the plant in a safe condition. The NRC has used the spatial location of these sets of equipment in table-top exercises and licensee contingency response drills to evaluate licensee capability to respond to an external threat with characteristics attributed to the design basis threat. The staff will continue to use the fault tree analyses in new operational safeguards response evaluations of contingency response capabilities at sites where contingency drills were not observed by RER teams. The staff will review available IPEs and IPEEs, as appropriate, to update the results of fault tree analyses from the previous RER program.

Some licensees have also used PRA-type analyses in responding to Generic Letter 89-07. At a sufficient distance, a vehicle bomb would present no safety challenge to a nuclear power reactor, regardless of the spatial relationships and interdependencies of the safety systems. Some licensees have chosen to implement their contingency plans at such distances. Other licensees have conducted analyses of spatial relationships and interdependencies of safety equipment to establish closer distances for implementing contingency plans. NUREG/CR-5246, "A Methodology to Assist in Contingency Planning for Protection of Nuclear Power Plants Against Land Vehicle Bombs," April 1989, describes a PRA-type methodology similar to that proposed by the Petitioners, which could be used by licensees to develop contingency plans.

The Annex to the Petition submitted on September 20, 1991, describes examples of plant designs and events that the Petitioners consider represent "possible types of vulnerabilities to beyond-the-design-basis safeguards events." The Petitioners assumed the success of sabotage on certain equipment before interdiction by the security force. Although the NRC staff does not agree with all of the details and conclusions of the Annex, the examples are similar to those developed by staff using site-specific fault tree analyses (where it is assumed that the saboteurs have successfully damaged some equipment before interdiction) as part of the RER and follow-on programs, which evaluate the effectiveness of licensee safeguards programs to protect against various sabotage scenarios.

These effectiveness evaluations conducted by the staff differ from those proposed in the Petition in one respect. The staff does not address adversary capabilities beyond those specified in the design basis threat. Conducting evaluations using more extensive threat characteristics would not provide useful information on the design of safety systems since one of the purposes of the design basis threat is to provide a standard for evaluating implemented safeguards measures. This design basis threat is well beyond the actual current threat environment. The PRA-type fault tree analyses are not affected by assumptions regarding adversary characteristics. Rather, assumptions regarding adversary characteristics influence the evaluations of the effectiveness of the physical security systems and measures in place to protect against external attacks. Although some licensees have chosen to modify safety systems to increase the difficulty of radiological sabotage, weaknesses identified from the results of the effectiveness evaluations are normally corrected by changes in the physical protection measures.

What the Petition intends in requesting an analysis of each plant's ability to withstand marginal increases in the postulated threat is not clear. The Petition contends that "an overall assessment will be feasible as to how much 'margin' exists beyond the design basis for each plant." The Petition also recognizes that PRA-type methods cannot be used to analyze for "core damage frequency" since one cannot quantify the likelihood of a terrorist attack.

On one hand, the Petition could be interpreted as a request for an analysis of the impact of marginal increases in the postulated threat on the effectiveness of safeguards measures. Having over 15 years of experience in evaluating the overall effectiveness of physical security systems, the staff believes that such evaluations do not lend themselves to quantitative analysis or qualitative PRA-type analyses. The staff has successfully used other types of qualitative techniques in evaluating the effectiveness of safeguards measures against general adversary capabilities. However, these techniques are insensitive to marginal changes in the postulated threat. ^{1/}

^{1/} An example of a postulated change in general adversary characteristics involved the use of a vehicle for entry into a protected area. The NRC evaluated whether this would significantly impact the effectiveness of site-specific physical security measures. In evaluating this postulated change, the staff identified only one set of circumstances in which a vehicle could have significantly impacted the ability of a power reactor licensee to protect the public health and safety. The licensee subsequently revised its security measures in such a way that the use of a vehicle became insignificant. However, the effectiveness of safeguards measures as measured by drills and exercises are generally insensitive to marginal increases in the postulated number of attackers.

On the other hand, based on the Petition's description of the specific type of analysis proposed and the examples in the Annex, the Petition could be interpreted as directly connecting increases in the design basis threat with the compromise of collocated safety equipment. The staff has been conducting the PRA-type analyses proposed in the Petition for about 10 years and has found that such a direct connection cannot be made. PRA-type analyses help identify various combinations of safety equipment which, if at least one combination is protected, would allow a licensee to maintain a plant in a safe condition. PRAs cannot assess the probability that a saboteur would choose to damage one set of equipment over another. There is no practical way to directly connect threats marginally greater than the design basis threat with sabotage of any amount of safety-related equipment.

The Petition states that "vulnerabilities" that are identified can be eliminated. It also notes that the proposed program would produce an assessment of the adequacy of the NRC's own safeguards regulations against terrorist threats. These were essentially the goals of the RER program. Having conducted comprehensive evaluations for 10 years, the staff concluded that the NRC's safeguards regulations were sound (SECY-91-052, February 26, 1991). RER reviews of safeguards effectiveness at each power reactor site led to more than 500 safeguards improvements. Although the RER program has been completed, the NRC has maintained the unique inspection capabilities developed during the RERs and is continuing to use these capabilities to evaluate the effectiveness of implemented safeguards.

In summary, the Petition is denied for the following reasons:

1. The Petition does not present any information or identify any issues that the Commission has not already considered and addressed in previous policy decisions and rulemaking.

2. The Part 73 design basis threat for radiological sabotage provides a standard for judging the adequacy of physical protection measures, analogous to using design basis accidents in judging the adequacy of safety systems. The design basis threat is not an additional standard for judging the adequacy of safety systems.
3. The Commission considered the issue of sabotage in developing the severe accident policy statement and did not include sabotage as a potential initiating event to be addressed in evaluating existing plants. Consistent with the severe accident policy statement, neither the IPE nor the IPEEE addressed intentional acts of sabotage.
4. On June 11, 1991, the Commission denied an earlier Petition for Rulemaking from the same Petitioners requesting revision of the NRC's regulations to increase the design basis threat for nuclear power reactors to include explosive-laden vehicles and a larger number of attackers using more sophisticated weapons.
5. The staff has performed a qualitative fault tree analysis of every operating nuclear power plant to assure that sufficient equipment is protected to provide adequate capability to shut down the plant and maintain it in a secure state. The staff used these analyses in its RER and continuing programs to evaluate the effectiveness of NRC's safeguards regulations and licensee-implemented safeguards to protect this equipment against the Commission's design basis threat.
6. To implement Generic Letter 89-07, some licensees have chosen to develop their vehicle bomb contingency plans for distances that would present no

safety challenge to a nuclear power reactor. Other licensees have conducted PRA-type analyses such as those requested in the Petition as a basis on which to develop their contingency plans.

7. Techniques for evaluating the effectiveness of physical security measures are generally insensitive to marginal increases in postulated threats, and there is no practical way to directly connect threats marginally greater than the design basis threat with sabotage of any amount of safety-related equipment.

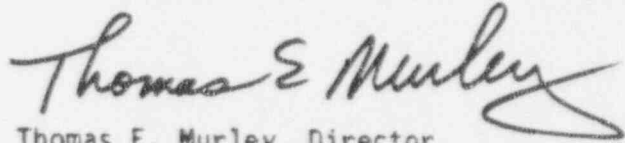
CONCLUSION

The NRC staff has reviewed the Petitioners' request that the Commission institute an IPE program requesting licensees to evaluate the margin of nuclear power plants to withstand an attack by explosive-laden surface vehicles and by a larger number of attackers using more sophisticated weapons than specified in the current design basis threat.

Institution of proceedings in response to a request made pursuant to 10 CFR 2.206 is appropriate only when substantial health and safety issues have been raised. See Consolidated Edison Company of New York (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975) and Washington Public Power Supply System (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). The NRC has applied this standard to determine if the actions requested in the Petition are warranted. For the reasons discussed above, the NRC has no basis for taking the actions requested in the Petition, since no substantial health and safety issues have been raised by the Petition. Accordingly, the Petitioners' request for action pursuant to 10 CFR §2.206 is denied.

A copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 CFR §2.206(c).

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, reading "Thomas E. Murley". The signature is written in dark ink and is positioned above the printed name and title.

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 31st day of December, 1991.