

NUCLEAR REGULATORY COMMISSION

10 CFR Part 73

[Docket No. PRM-73-12]

Committee to Bridge the Gap, Receipt of Petition for Rulemaking

AGENCY: Nuclear Regulatory Commission.

ACTION: Petition for rulemaking; notice of receipt.

SUMMARY: The Nuclear Regulatory Commission (NRC) is publishing for public comment a notice of receipt of a petition for rulemaking, dated July 23, 2004, which was filed with the Commission by Daniel Hirsch, President, Committee to Bridge the Gap (CBG). The petition was docketed by the NRC on September 29, 2004, and has been assigned Docket No. PRM-73-12. The petitioner requests that the NRC amend its regulations to upgrade the “design basis threat” regulations ((DBT), or the magnitude of threat that the facility’s security systems must be capable of defeating) and associated requirements for protection of domestic reactors from nuclear terrorism to a level that encompasses, with a sufficient margin of safety, the terrorist capabilities evidenced by the attacks of September 11, 2001.

DATE: Submit comments by (insert date 75 days after publication in the Federal Register).

Comments received after this date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before this date.

ADDRESSES: You may submit comments by any one of the following methods. Please include the following number PRM-73-12 in the subject line of your comments. Comments on petitions submitted in writing or in electronic form will be made available for public inspection. Because your comments will not be edited to remove any identifying or contact information, the NRC cautions you against including any information in your submission that you do not want to be publicly disclosed.

Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff.

E-mail comments to: [SECY@nrc.gov](mailto:SECY@nrc.gov). If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at (301) 415-1966. You may also submit comments via the NRC's rulemaking web site at <http://ruleforum.llnl.gov>. Address questions about our rulemaking website to Carol Gallagher (301) 415-5905; email [cag@nrc.gov](mailto:cag@nrc.gov).

Comments can also be submitted via the Federal eRulemaking Portal  
<http://www.regulations.gov>.

Hand deliver comments to: 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 am and 4:15 pm Federal workdays. (Telephone (301) 415-1966).

Fax comments to: Secretary, U.S. Nuclear Regulatory Commission at (301) 415-1101.

Publicly available documents related to this petition may be viewed electronically on the public computers located at the NRC's Public Document Room (PDR), O1 F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The PDR reproduction contractor will copy documents for a fee. Selected documents, including comments, may be viewed and downloaded electronically via the NRC rulemaking web site at <http://ruleforum.llnl.gov>.

Publicly available documents created or received at the NRC after November 1, 1999, are available electronically at the NRC's Electronic Reading Room at

<http://www.nrc.gov/reading-rm/adams.html>. From this site, the public can gain entry into the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737 or by email to [pdr@nrc.gov](mailto:pdr@nrc.gov).

FOR FURTHER INFORMATION CONTACT: Michael T. Lesar, Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Telephone: 301-415-7163 or Toll Free: 800-368-5642.

SUPPLEMENTARY INFORMATION:

Background

The petitioner states that CBG has been active in attempting to increase protection at nuclear facilities against the risk of nuclear terrorism for a quarter of a century. The NRC's current DBT regulations for nuclear power plants were issued in the 1974-1976 period (February 24, 1977; 42 FR 10836), with only one substantive modification in the ensuing thirty years, the truck bomb rule (August 1, 1994; 59 FR 38889). The petitioner states that DBT regulations established in the mid-seventies do not require nuclear plant security be designed to protect against:

- (a) More than one insider;

- (b) More than several external attackers;
- (c) Attackers capable of operating as more than one team (i.e., capable of employing “effective team maneuvering tactics”); and
- (d) A group or individual using weapons of greater sophistication than hand-held automatic weapons.

The petitioner states that the original DBT regulations essentially required the attacks to be on foot, by not requiring protection from truck bombs, or attacks by boat or air.

The petitioner asserts that despite the facts that the original September 11, 2001, plot considered attacking U.S. nuclear plants, that the terrorist risk has increased since September 11, 2001, and that U.S. authorities warn that Al Qaeda is planning even more spectacular and deadly attacks in the U.S., nearly three years after the September 11, 2001, attacks, U.S. nuclear reactor facilities remain unprotected against air attacks or against ground attacks involving the September 11, 2001, number of attackers. The petitioner believes something must be done promptly to protect these facilities – and the American public. Increased threats, however, can be countered by measures that can be implemented for modest cost but which will provide substantial protection against events with such potentially catastrophic consequences.

#### The Petitioner’s Request

##### NRC Security Requirements for Protection of Nuclear Power Plants from Terrorist Attack.

The petitioner requests that 10 CFR 73.1(a) be revised to encompass attacking forces equal to those of the terrorist attack on September 11, 2001, plus a margin of safety, in numbers, teams, capabilities, planning, willingness to die, and other characteristics. The terrorist attack on September 11, 2001, involved 19 attackers in 4 teams. The DBT regulations

should be changed to include at least 19 attackers, plus a margin of safety above that level.

The NRC should also take into consideration the inclusion of multiple coordinated teams. The petitioner believes that the attackers should be presumed to use a full range of potential weapons of which a group such as Al Qaeda would be capable, to include shaped charges, shoulder-fired rockets, mortars, anti-tank weapons, large quantities of explosives, etc. The explosives, weapons, and equipment need not be limited to hand-carried items, as stated in the current regulations (10 CFR 73.1(a)(1)(i)(D)). The attackers should be presumed to be ruthless, highly motivated, willing and even intent on dying, very creative, thorough, and capable of extended planning and preparation. The DBT regulations should include a minimum of three insiders, in addition to the 19 external attackers, rather than the current 1 insider as stated at 10 CFR 73.1(a)(1)(i)(B) and (ii). The insiders should be presumed to play both a passive role (e.g., supplying information) and active capacity (e.g., directly participating in a coordinated attack or separate sabotage actions), a land vehicle should not be limited to a four-wheel drive car or truck, as is now the case at 10 CFR 73.1(a)(1)(i)(E) and (iii), but include the full range of trucks and other vehicles that a group like Al Qaeda might employ for such an attack.

The petitioner states that the DBT regulations should include attacks by foot or by land vehicle (e.g., vehicle bombs), as well as by boat and by air. The DBT regulations addressing air attack should include a fully loaded jumbo jet of maximum size in commercial service and full fuel tanks, and more maneuverable smaller planes and helicopters. The petitioner states that the NRC should consider explosives potentially present in the aircraft as well as the mass of the plane and the effect of its fuel when igniting. The DBT regulations should protect both against direct impact of the aircraft on sensitive facilities at the nuclear plant and against use of the aircraft or helicopter for dropping explosives on those facilities. The petitioner also states that

the NRC should consider the coordination of an air attack with assistance from insiders at the plant and/or external attackers (i.e., damage to systems from the air attack coupled with failure of backup systems due to coordinated action on the ground).

Mandate Security Plans, Systems, Inspections, and Force-on-Force Exercises Protect Against the Amended DBT.

The petitioner states that the security plans and physical systems implementing those plans, inspections and force-on-force Operational Safeguards Response Evaluation (OSRE) program exercises must be upgraded to conform to the proposed DBT regulations. The petitioner believes they must demonstrate high confidence to be able to repel a September 11, 2001, level assault.

Require Prompt Construction of Shields from Air Attack at Standoff Distances from Key Support Structures at Nuclear Plants “Beamhenge”.

The petitioner states that nuclear power plants were not designed to withstand the attack by a fully loaded jumbo jet nor the intentional use of airplanes for terrorist purposes.

The petitioner proposes the construction of shields composed of I-beams with steel or other cabling and netting between them at standoff distances around the key structures at nuclear plants. Airplanes or jets attempting to attack sensitive structures would instead crash into the surrounding Beamhenge shield, leaving intact the reactor, spent fuel pool, and support facilities, thus protecting the public from damage that could result in substantial radioactivity releases. The Beamhenge concept may also provide some measure of protection against such

weapons as shoulder-launched rockets, causing them to detonate before reaching their intended target.

The petitioner states that I-beams are relatively inexpensive, and their installation can be done quickly and with modest expenditures. The petitioner estimates that Beamhenge shields could be constructed for a fraction of one percent of the original construction cost of the nuclear plant. The petitioner believes that with such a low price and relative ease of deployment, the burden is on the Commission to justify why implementation of the Beamhenge approach should not be mandated immediately. This petitioner requests that the shields against air attack be required to be promptly constructed at the nation's nuclear plants, on a time urgent basis.

#### Conclusion

The petitioner states that the Commission's DBT regulations remained essentially unchanged, with one exception, for nearly thirty years, despite dramatic increases in terrorist incidents, casualties, and capabilities. The petitioners seek a revision of the threat basis to include attack from the air by airplanes and jets, and attacking forces by land, water, or air - at least equal to the nineteen terrorists involved in the September 11, 2001, attacks in numbers, capacity, ruthlessness, dedication, skills, planning, and willingness to die and create large numbers of casualties. Additionally, the petitioners propose that the security requirements in Part 73 be upgraded to provide high confidence in the ability of the security system to protect against the proposed upgraded September 11, 2001-equivalent DBT. In particular, the petitioners propose requiring, under a time-urgent schedule, construction at reactor sites of shields consisting of I-beams and cabling (Beamhenge) at stand-off distances from buildings and other assets important to safety at reactor sites so that airplanes or jets attempting to attack sensitive structures would instead crash into the surrounding Beamhenge shield, leaving

intact the reactor, spent fuel pool, and support facilities, thus protecting the public from damage that could result in substantial radioactivity releases.

Dated at Rockville, Maryland, this 1<sup>st</sup> day of November 2004.

For the Nuclear Regulatory Commission.

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Annette Vietti-Cook,

Secretary of the Commission.