



POLICY ISSUE
(Notation Vote)

April 16, 1993

SECY-93-102

FOR: The Commissioners

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: REVIEW AND UPDATE OF OPTIONS TO PROTECT
AGAINST MALEVOLENT USE OF VEHICLES AND
RELATED THREAT INFORMATION

PURPOSE:

To provide information regarding the 1985-1988 Commission deliberations on the need to require nuclear power reactors to protect against malevolent use of vehicles and to provide an updated range of protection along with current cost information.

BACKGROUND:

The Commission began its deliberations on the vehicle issue in 1985 and a series of Commission meetings and papers followed. These meetings and papers focused on: 1) a range of options to respond to the threat posed by vehicles and 2) Nuclear Regulatory Commission and other agency assessments of the threat and the continuing validity of the design basis threat (DBT) for radiological sabotage. Each of these areas is addressed in turn.

1) Options for the Vehicle Threat

Staff developed a final set of options which were provided to the Commission in SECY-88-127 (Enclosure 1). These options may be grouped as: A) contingency planning -- both short-range and long-range planning by licensees and NRC, and B) physical security requirements. Details of the options are provided on pages 3, 4, and 5 of Enclosure 1. The physical security options addressed were: 1) vehicle denial system on existing access

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roads to power reactor sites, 2) vehicle denial system for land portion of protected area perimeter, and 3) surface vehicle bomb protection.

Although staff recommended that the Commission approve contingency plans for use by the NRC staff in the event that a vehicle bomb threat were to arise, the Commission directed in a Staff Requirements Memorandum, dated June 16, 1988, (Enclosure 2) that short-range contingency planning by licensees be required that would assure that plans were in place for installation of temporary emergency measures for response to a surface vehicle bomb threat.

2) Previous Threat Assessments and Validity of the Design Basis Threat

In addition to considering a number of options the Commission also solicited the views of other agencies. A number of Commission meetings between 1985 and 1987 included threat briefings by the Central Intelligence Agency, the Federal Bureau of Investigation (FBI), and the Department of Energy (DOE). Further, guidance was sought from the National Security Council (NSC). The NSC and the FBI documented their assessments in classified correspondence to the NRC. Enclosure 3 (classified) summarizes pertinent points made by the FBI and the NSC. In choosing short-range contingency planning, the Commission also chose not to modify the DBT based on available information. (Updated intelligence information available to the NRC will be presented at the closed portion of the April 22, 1993 Commission meeting.)

DISCUSSION:

The intrusion incident at the Three Mile Island power reactor and the bombing at the World Trade Center renewed the Commission's interest in the vehicle threat. In the World Trade Center attack it appears that a van bomb, containing between 500 and 1,500 pounds of explosives, was detonated in a public underground parking garage. Regarding the intrusion at Three Mile Island, NUREG-1485, "Unauthorized Forced Entry into the Protected Area at Three Mile Island Unit 1 on February 7, 1993," reports the findings of the NRC Incident Investigation Team. The Team's findings were considered by staff in the preparation of this paper. The report highlighted the fact that: 1) the performance objectives of 10 CFR Part 73 for establishing and maintaining a physical protection system do not effectively address the use of a vehicle for entering the protected area in a manner similar to the February 7, 1993, event, 2) the method of entry into the protected area significantly affected the security program response strategy toward protecting the vital areas and

protecting against radiological sabotage, and 3) the NRC staff has not effectively defined and communicated its expectations for the licensee's security program performance in response to vehicle intrusions.

In response to the Staff Requirements Memorandum, the staff has prepared an updated list of four options for Commission consideration.

Updated List of Physical Protection Options

Option 1: No Change - No change in current position.

The DBT for radiological sabotage does not specifically address the use of vehicles by an adversary, although use of a vehicle as a mode of entry into a protected area is not excluded. Protected area chain-link fences and vehicle gates, at most licensed nuclear power reactors, are not designed to protect against vehicle intrusion.

Generic Letter 89-07, "Power Reactor Safeguards Contingency Planning For Surface Vehicle Bombs," was issued April 28, 1989, as a result of the Commission deliberations between 1985 and 1988. It requested that licensees prepare a safeguards contingency procedure to address the possibility of a land vehicle bomb. The procedures were to include short-range measures which could be implemented, within 12 hours after notification by NRC, to protect against unauthorized vehicle access closer than safe standoff distances. A Safeguards Information addendum characterized a design basis truck bomb. Staff confirmed that licensee contingency procedures were developed by an initial inspection during 1989-90 and reconfirmed this in 1993.

Cost to licensees: None. However, if contingency measures should be undertaken, these measures would result in implementation and operating costs. For example, staff estimates that passive barriers will cost \$25,000 - \$150,000 per site, and approximately \$4,000 per day for personnel costs (for vehicle access controls) and rentals of vehicles to be used as active barriers.

Cost to NRC: None.

Pros: There is no known credible threat to use a vehicle as an aid in committing radiological sabotage at a domestic nuclear power reactor.

Available threat-related information suggests that the threat to nuclear facilities is low.

Cons: The findings and conclusions of NUREG-1485 regarding vehicle intrusions into protected areas would not be addressed.

This option depends on the Intelligence Community's ability to provide warning. However, the bombing at the World Trade Center demonstrated that a threat could materialize in the United States without being detected and without forewarning.

Option 2: Roadway Protection - Require a vehicular protection system on existing roadways and some distance on either side of the vehicle control points into protected areas.

This option would protect against forced vehicle entry only in the immediate area of existing vehicle gates into the protected area. Because the remainder of the protected area perimeter would remain vulnerable to vehicle intrusions, licensee contingency planning for land vehicle bombs would be retained.

Barriers that could be used to protect gates include permanent active barriers that can be lowered to permit passage of authorized vehicles and temporary barriers that can be moved. Adjacent areas could be protected by passive barriers such as concrete blocks, bollards (i.e., heavy posts), or planters, all which must be properly anchored into the ground.

Cost to licensees: Assuming a site with 4 protected area vehicle access points, with 4 active barriers and 400 feet of concrete barriers, the total initial capital cost is estimated to be between \$200,000 and \$300,000. Some sites may choose to protect as many as 15 vehicle access points, which could cost as much as 1 million dollars. Some licensees with multiple roadways and gates may choose to place permanent barriers across some roads.

Cost to NRC: A one-half FTE to conduct licensing reviews and .5 FTE to inspect systems.

Schedule: If barriers are available, staff estimates that it would take 6 months for licensees to implement this option.

Staff has been informed that there is currently a heavy demand for active barriers and a significant increase in demand could make it difficult for all licensees to meet this schedule. Staff estimates approximately 6 months to inspect the implementation.

Pros: This option would protect against a Three Mile Island-type intrusion.

No threat-related information has been developed that vehicle bombs travelled on other than paved highways and streets. Therefore, this option might provide a deterrent effect.

Cons: The remainder of the protected area perimeter would remain vulnerable to vehicular intrusions and an adversary might choose to attack offroad.

Protection against a vehicle bomb may not be achieved.

Option 3: Protected Area Perimeter Protection - Instead of existing contingency procedures, require protection against vehicular intrusions into protected areas.

This option would extend vehicle protection to the entire protected area. In addition to the type of barriers discussed in Option 2, licensees could use other techniques such as trenching or reinforcing existing fencing with anchored cabling systems.

This option would also provide varying degrees of protection against a vehicle bomb. At facilities with an average sized protected area and typical concrete structures, a vehicle bomb similar to that used at the World Trade Center may cause moderate damage to some concrete walls. However, the safety equipment located behind typical concrete walls, but not contiguous to outside walls, would likely be protected. Some facilities also have intervening structures which might absorb some of the energy from an explosive blast.

However, some protected areas are smaller and have portions of the protected area perimeter that are close to a vital area barrier and would likely be severely damaged. In addition, not all safety equipment is protected by reinforced concrete walls. At a few sites, significant portions of safety systems are not behind concrete walls.

Cost to licensees: Staff estimates that the typical initial capital cost would be between \$300,000 and \$400,000. Some sites may choose to protect as many as 15 vehicle access points, which could cost as much as 1.3 million dollars. This assumes that the licensees choose to install four active vehicle barriers to control access to protected areas. Staff estimated additional costs by examining drawings showing the protected area perimeter of 26 sites, including the site that staff believes has the largest perimeter. Both the mean and median distance around the protected area perimeter were about 5,000 feet. Staff estimated the cost of perimeter protection by assuming the use of cable in existing fences, which is less expensive than concrete barriers. Trenching may be less expensive, but has more variable costs and may have more maintenance costs, depending on site conditions.

Costs would vary because some sites may choose to provide active barriers for more than two vehicle gates and some sites have only one gate. Although staff used an average perimeter of 5000 feet,

site protected area perimeters examined ranged from about 2,000 to nearly 9,000 feet. Some licensees with multiple roadways and gates may choose to place permanent barriers across some roads.

Cost to NRC: A one-half FTE to conduct licensing reviews and 1 FTE to inspect systems.

Schedule: Approximately 6 months for the licensees to implement, unless the demand for active barriers exceeds the supply. Approximately 6 months to inspect.

Pros: This option would enhance protection against an external adversary using a vehicle and attempting to rapidly enter vital areas to cause radiological sabotage.

This option would provide varying degrees of protection against a vehicle bomb.

Cons: The level of protection against a vehicle bomb would be highly site specific and could be low at some sites. Staff is unable to predict the level of protection against vehicle bombs with confidence without detailed, site specific, multi-disciplinary analyses.

Option 4: Protection at Standoff Distance for a Design Basis Vehicle and Explosive Device - Instead of existing contingency procedures, require protection against vehicle intrusions into the protected area and against a design basis vehicle and explosive device.

This option adds to Option 3, protection against vehicular intrusions into protected areas, a requirement that licensees also protect against a vehicle bomb of a specified size. Existing contingency procedures would remain in effect until permanent measures are implemented.

At some sites, protection against vehicular intrusions into protected areas may be sufficient to protect against the design basis vehicle bomb. At other sites, licensees would have to provide additional measures to protect against unauthorized vehicles approaching close enough to vital equipment to cause a significant safety risk. Staff believes that this could be done at most sites without reconfiguring existing protected area perimeters, intrusion detection systems, and closed-circuit television or increasing the size of security forces. The extent of additional measures required for some sites would vary depending on the size of the design basis explosive used in determining appropriate standoff distances. Implementation

options would include installing permanent or moveable barriers to protect against vehicle access to portions of the protected area perimeter or installing blast shields or deflectors to protect vital equipment. A few licensees may have to reconfigure existing parking lots to provide additional standoff distance.

At sites where important plant safety equipment does not have appropriate blast protection, licensees may have to either: 1) reconfigure the existing protected area perimeter to establish an adequate standoff distance or 2) establish a new vehicle control area (VCA) at a safe standoff distance. Establishing a larger protected area would require additional chain-link fencing, intrusion detection systems, lighting, and closed-circuit television systems. Alternatively, establishing a VCA would move the vehicle protection system out to a distance greater than existing protected areas. In some cases, topographical features such as rivers, lakes, canals, and cliffs may be incorporated to reduce the length of new vehicle barriers.

In addition to permanent barriers, the VCA would require active barriers and one or more vehicle check points to control vehicle access. If these check points were sufficiently far from existing protected area vehicle gates, they may have to be permanently staffed. In implementing a VCA, licensees would be allowed to decide to restrict vehicle access by moving parking lots outside the VCA. Licensees would also be allowed to choose between searching all vehicles entering the VCA or establishing criteria on the size of vehicles that would not have to be searched because the vehicle could not carry sufficient explosives to endanger public health and safety. It is also possible that a new VCA may encompass a warehouse that was intentionally located outside of the protected area to minimize the need for vehicle searches. Some vehicles and their cargoes are very difficult to search properly and may need specialized processing or search equipment.

Cost to licensees: Staff estimates that the initial capital cost would range between \$500,000 and \$800,000. At some sites, because of their plant configuration and layout and protection of a greater number of vehicle gates, the cost may be as much as 1.7 million dollars. (This initial cost assumed a design basis explosive of the size that staff will reference in the closed Commission meeting on April 22, 1993.) Staff estimates assume that the licensee chooses to install four active barriers to control access to protected areas. Staff also assumes a protected area perimeter of 5,000 feet and the use of cable for most of the protected area perimeter. The total cost includes the expense of a plant specific analysis of required standoff distances to protect against the design basis explosive.

For those areas where staff's cost analysis indicated a need for vehicle standoff beyond portions of the protected area, the assumption was made that concrete barriers were used. Also, at one of the 26 sites examined, there would be expense for relocation of parking facilities. Because standoff distances may extend out further than the present vehicle access points at a few sites, additional staffing (about two persons) may be required to supplement the vehicle access control and search function. If a new VCA had to be established at distances significantly beyond protected area vehicle gates, additional staff may be about one or two security officers per shift.

Cost to NRC: Four FTE to confirm licensee analyses, 1 FTE to conduct licensing reviews, and 1.5 FTE to inspect systems.

Schedule: Nine months for licensees to implement (demand for active barriers may extend schedule).

Pros: All licensees would provide at least a known, consistent level of protection against vehicle intrusions and a vehicle bomb.

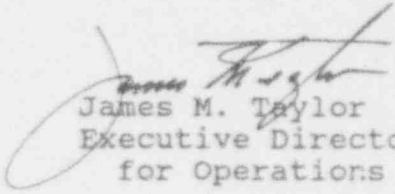
Cons: At some plants, may require either an additional layer of security at the VCA and a commitment of additional security officers for the life of the plant or significant modifications to existing protected areas.

RECOMMENDATIONS:

That staff recommendation be delayed until after the May 10, 1993, public meeting on the DBT for radiological sabotage to allow for staff consideration of public input.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.


James M. Taylor
Executive Director
for Operations

cc: SECY
OGC
OPA
OCA

Enclosures:

1. SECY-88-127, dated May 10, 1988
2. Staff Requirements Memorandum,
dated June 16, 1988
3. Other Agencies' Views, NRC
Summary Assessment, Alternative
Sizes (Classified - provided under separate cover)

Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Monday, May 3, 1993.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Monday, April 26, 1993, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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POLICY ISSUE

SECY-88-127

(Notation Vote)

May 10, 1988

For:

The Commissioners

From:

Victor Stello, Jr., Executive Director for Operations

Subject:

CONTINGENCY PLANNING TO COUNTERACT POSSIBLE SURFACE VEHICLE THREAT

Purpose:

To provide the Commission with a range of options and a recommendation for contingency planning which could be taken to counteract a surface vehicle threat, as requested by Staff Requirements Memorandum (SRM), dated February 24, 1988 (Enclosure 1).

Summary:

This paper discusses threat considerations as they might assist the Commission in selecting from a range of options presented for consideration. There appears to be no need to require the development of any additional licensee contingency plans at this time. Rather, a recommendation is made which would require development of contingency plans by the staff to assist in promptly providing comprehensive guidance and information to licensees for possible actions in responding to a surface vehicle threat.

Background:

Commission Papers SECY-86-101, dated March 31, 1986, (Enclosure 2) and SECY-86-101A, (CONFIDENTIAL) dated June 12, 1986, entitled "Design Basis Threat - Options for Consideration," provided the Commission with staff recommendations based on considerations arising from the use of vehicle bombs in the Middle East and their possible impact on the domestic threat situation.

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SECY-86-101A contained a recommendation by the staff to defer previous recommended actions (Option 4 of SECY-86-101) which would have required power reactors and certain fuel cycle facilities to develop security response plans for both near and long-term contingencies if any significant change to the domestic threat environment occurred. The Commission approved the recommended deferral of this option pending receipt of additional information from the Executive Branch. The briefing provided to the Commission on December 22, 1987 by the Executive Branch (NSC, FBI, CIA, DOE), satisfied the Commission as to the continuing validity of the design basis threat statements and resulted in the issuance of the SRM identified above.

It should be noted that the present design basis threats and safeguards requirements were developed as a prudent step in the absence of a known credible threat to the nuclear industry. There has been no credible vehicle bomb threat against the commercial nuclear industry in the past, nor is there any indication that such a threat exists today. Therefore, any change to the design basis threat for radiological sabotage, and the corresponding development of added requirements would be for reasons of additional conservatism and prudence. Although the existing design basis threats do not specifically include adversarial use of vehicles, they do not preclude adversarial use of all types of transportation, including boats, to gain access to the protected area. The purpose of the protected area barrier at power reactors is to aid detection rather than to prevent adversarial entry. As used in this paper, the term surface vehicle refers to land-based vehicles only. However, a preliminary resource estimate on research needed to begin development of the water-borne vehicle issue is included.

Discussion:

FUEL FACILITIES

At the present time, requirements for vehicle denial systems at protected area barriers to preclude use of a vehicle in a theft attempt have been proposed and have undergone public comment. The use of vehicle denial systems at fuel facilities using or possessing unirradiated highly enriched uranium (Category I) is intended solely to achieve comparability with the DOE for protection against theft of weapons-useable material. Such systems may also provide a degree of protection against radiological sabotage committed via a vehicle bomb, (see Option 5 under OPTIONS FOR POWER REACTORS). However, the threat at Category I fuel facilities is one of theft of special nuclear material (SNM) rather than radiological sabotage.

Assuming a worse case scenario in which the wall of a vault was destroyed, there would not be any significant offsite release. Furthermore, licensee security plans require the imposition of appropriate compensatory measures to assure continued protection of SNM. Accordingly, the staff does not believe further actions are necessary at Category I fuel facilities to protect against a surface vehicle bomb.

OPTIONS FOR POWER REACTORS

The following options represent a consolidation of options previously presented under SECY-86-101 (Options 4 and 5 described below), new options (Options 1, 2, and 6 described below) specifically responsive to the SRM dated February 24, 1988 and a modified option from SECY-86-101 (Option 3 described below).

1. Maintain Present Posture

In the staff's opinion, an analysis of information received from the intelligence community does not justify a revision to the design basis threat for radiological sabotage at this time. Since there has been no change in the threat environment, any change to our requirements would not be justified purely on that basis.

2. NRC Contingency Plans

This option entails staff action to assure that NRC incident response programs adequately address contingency plans in response to the threat of a surface vehicle bomb. Staff action would be directed to assure the development of guidance and procedures for staff use if an emergency of this nature were to arise.

3. Licensee Contingency Plans

a. Short Range Licensee Plans

Under this option, licensees would be expected to accomplish contingency planning for temporary emergency measures to be implemented in response to a surface vehicle bomb threat.

In particular, licensees would be requested to identify protective measures that could be taken with locally available resources to defend against a surface vehicle bomb attack were such a threat to materialize.

b. Long Range Licensee Plans

In addition to short range contingency plans, this option would involve development of site-specific plans for permanent measures to protect against surface vehicle bomb attack, but stop short of implementation. Planning would include surveys, engineering analysis, design and related activities resulting in detailed specifications for site-specific protection. Licensees would invoke these plans and begin construction and installation of permanent protection measures, if warranted, based upon future NRC notice of need due to change in the threat environment.

4. Vehicle Denial System for Surface Vehicles Using Roadway Access

This option would revise the design basis threat* and provide for a vehicle denial system only in the immediate area of existing vehicle gates. Supplemental denial systems include hydraulic barriers; concrete bollards (i.e., heavy posts anchored in the ground); planters or other structural obstacles that would provide increased penetration resistance near vehicle gates and would present a possible deterrent effect. The remaining protected area perimeter would remain vulnerable to vehicle penetration. (See SECY-86-101 for additional background under Option 2.)

5. Vehicle Denial System for Surface Vehicles at Protected Area

This option would revise the design basis threat* and provide for a vehicle denial system for the land portion of the protected area perimeter. System components would include those identified in Option 4 plus cabling in the

*10 CFR 73.1(a)(1)(D) would be modified to add a road vehicle as a tool for breaching perimeter barriers. This modification would not include vehicle-delivered explosives. It should be noted that SECY-86-101 states that although adoption of options equivalent to either Option 4 or 5 above would increase the level of security, there might not be a substantial overall increase in the public health and safety.

fence, and additional bollards and revetments. This system would deny vehicle access to the protected area at the existing protected area boundaries. (See SECY-86-101 for additional background under Option 3.)

6. Protection Against Surface Vehicle Bombs

This option would revise the design basis threat** and provide for a surface vehicle denial system and any other steps necessary to mitigate the effects of a design basis explosives charge.

METHODS FOR REGULATORY ACTION AND DESIGN/IMPLEMENTATION CONSIDERATIONS

General

All options requiring action, whether by the NRC or by licensees would require NRC to establish design standards (i.e., vehicle weight and speed or explosives weight). For Options 3 through 6, licensees would necessarily have to develop site-specific information (i.e., site layouts, site hardening features, calculation of desired standoff distances, etc.) to permit development of actions necessary to mitigate damage from a vehicle bomb attack. Data are already available regarding the issue as to the design basis vehicle and vehicle denial techniques. Three months additional research by the NRC related to design basis explosives would be required. If study of the new initiative of water-borne vehicle bombs is pursued, design vehicle and explosives data for this issue would require an estimated six months of research and study. One aspect of this issue requiring resolution involves how to implement vehicle denial systems on public waterways while preserving public water rights.

In the staff's opinion, the adoption of Options 3a, 3b, 4, 5, or 6 may present difficulties in justifying backfitting. Based upon staff opinion, change to the regulatory base is unwarranted because no change to the threat environment has occurred. Under these circumstances it may be difficult to satisfy the "substantial additional safety" requirements for the regulatory analysis portion of a backfit analysis.

**10 CFR 73.1(a)(1)(D) would be modified to include vehicle-delivered explosives.

Option 2 (NRC Contingency Plans)

The development of a contingency plan for staff use would entail the expenditure of 0.2 to 0.5 FTE of staff resources depending on the degree of detail included.

Option 3a (Short Range Licensee Plans)

The adoption of Option 3a could entail voluntary licensee actions. They could be encouraged to prepare written plans which would be subject to limited inspection activities. The staff does not believe that it would be necessary for licensees to submit plans for review and approval under Option 3a. Limited inspection could be conducted to see if licensees had initiated appropriate plans to satisfy NRC direction. However, staff would be required to develop standard planning factors, acceptance criteria, and inspection guidance.

It is estimated that licensees could develop short range plans within 180 days after NRC development of planning factors and guidance. Actual implementation of such plans, if presented with a credible threat would be incremental, beginning with notification of response personnel, both on and offsite. The desired time for full implementation should be no more than 12 hours after notification.

Option 3b (Long Range Licensee Plans)

Similar to Option 3a, the staff believes adoption of Option 3b could entail voluntary licensee action with no need for plan submittal, review, and approval. As stated above, staff would be required to develop standard planning factors, acceptance criteria, and inspection guidance.

It is estimated that development of long range licensee plans under Option 3b would require 26 months (after NRC guidance development) and an additional 14 months would be required for full implementation if the Commission decided to require such action.

Option 4 (Vehicle Denial System for Surface Vehicles
Using Roadway Access)

Adoption of this option would require modification to 10 CFR 73.1(a)(1)(D) to add a road vehicle as a tool for breaching perimeter barriers at roadway access points. This modification would not include vehicle-delivered explosives. Initial licensee costs are estimated to be \$100K-\$200K/facility with an annual maintenance cost of \$10K-\$20K/facility. NRC staff effort for rule development and plan review is estimated to be 6-8 SY. The elapsed time through implementation is estimated to be 34 months.

Option 5 (Vehicle Denial System for Surface Vehicles
at Protected Area)

Adoption of this option would require modification to 10 CFR 73.1(a)(1)(D) to add a road vehicle as a tool for breaching perimeter barriers. This modification would not include vehicle-delivered explosives. Initial licensee costs are estimated to be \$500K-\$1000K/facility with an annual maintenance cost of \$25K-\$50K/facility. NRC staff effort for rule development and plan review is estimated to be 8-10 SY. The elapsed time through implementation is estimated to be 40 months.

Option 6 (Protection Against Surface Vehicle Bombs)

Under this option, 10 CFR 73.1(a)(1)(D) would be modified to include vehicle-delivered explosives. Implementation estimates have not been developed by the staff for this option.

Some facilities may not be able to provide sufficient standoff within their present owner-controlled areas without taking additional steps to mitigate the effects of an explosion. It may not be possible to provide sufficient standoff distances at certain sites due to the existence of public lands, railroads, highways, and private property surrounding the site. Criteria development and site-specific reviews would be necessary to further develop this option.

CURRENT INDUSTRY INITIATIVES

The staff recently conducted an informal telephone survey of Regional offices to estimate the extent to which power reactor licensees may have initiated some action as a result of NRC Information Notice 84-07, "Design Basis Threat and Review of Vehicular Access Controls."

Limited measures have reportedly been taken by approximately one third of the power reactor sites, e.g., installing concrete barriers ("Jersey Bounces," posts, bumpers, substantial concrete slabs or pots); installing aircraft cable in protected area fencing; reinforcing gates; installing double fencing or guard rails; and conducting vulnerability studies or contingency planning reviews.

DOE POSTURE

As quoted from its letter of March 14, 1988, the DOE position is:

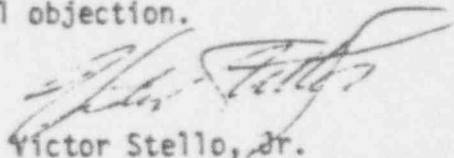
DOE requires security contingency planning measures to address possible adversaries' actions against DOE facilities based on DOE's generic threat statement assumptions. Steps taken by DOE over the past few years to upgrade protection consistent with its generic threat statement, provide some mitigation against attack which might include a truck bomb. Mitigation measures include such activities as physical security upgrades (hardening of buildings, vehicle barriers around sites), provisions for area isolation, means of restricting vehicle movement within the sites, dedicated response forces, frequent drills and exercises, the authority to use deadly force, and air space restrictions. Design and implementation of these measures reflect site-specific considerations.

Recommendations: That the Commission:

1. Approve

- a) For Category I fuel facilities, staff recommendation that no further actions are necessary to protect against a surface vehicle bomb.
- b) For power reactors, Option 2: Approve development of contingency plans for use by the NRC staff in the event that a vehicle bomb threat were to arise.

2. Note that the Offices of Nuclear Material Safety and Safeguards and Nuclear Reactor Regulation have concurred on this paper; the Office of the General Counsel has reviewed this paper and has no legal objection.



Victor Stello, Jr.
Executive Director for Operations

Enclosures:

1. 2/24/88 Memo to V. Stello
fm S. Chilk
2. SECY-86-101

Commissioners' comments or consent should be provided directly to the Office of the Secretary by c.o.b. Wednesday, May 25, 1988.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Wednesday, May 18, 1988, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

February 24, 1988

IN RESPONSE, PLEASE
REFER TO: M871222

ACTION - Thompson, NMSS

Cys: Stello
Taylor
Rehm

Murley
Murray

LIMITED DISTRIBUTION

MEMORANDUM FOR: Victor Stello, Jr.
Executive Director for Operations

FROM:

G. B. Taylor
Samuel J. Chilk, Secretary

SUBJECT:

STAFF REQUIREMENTS - BRIEFING BY EXECUTIVE
BRANCH, 10:00 A.M., TUESDAY, DECEMBER 22,
1987, CHAIRMAN'S CONFERENCE ROOM, D.C. OFFICE
(CLOSED--EX. 1)

cc: HLT
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Yardman

The Commission was briefed by members of the Executive Branch and the NRC staff on the NSC's December 16, 1987, response to the NRC's letter of July 1985 to Mr. McFarlane.

The Commission requested that the staff continue its close contacts with the Executive Branch agencies and advise the Commission promptly of any changes in its assessment of the present threat level at NRC licensed facilities.

The Commission (with Chairman Zech and Commissioners Carr and Rogers agreeing) requested that the staff provide a Commission paper discussing a range of options for paper contingency planning which could be taken to counteract a possible surface vehicle threat up to and including a vehicle bomb at power reactors and Category I fuel cycle facilities. The staff should provide their recommended regulatory directive and a proposed method for implementation as well as a summary of any current industry initiatives. The Commission would also like to hear specifically what the Department of Energy has done in terms of mitigation and contingency planning.

(EDO)

(SECY Suspense: 3/16/88)

Commissioners Roberts and Bernthal do not believe that an options paper is necessary; they believe that the staff should prepare for Commission approval an appropriate regulatory directive that would require licensees to prepare contingency plans that would serve as a basis for action to respond to notification of a vehicle bomb threat. Commissioner Roberts believes that this action is prudent and is dictated by a need that the utility and especially those at the plant site be informed and ready in the unlikely event of an actual threat.

cc: Chairman Zech
Commissioner Roberts
Commissioner Bernthal
Commissioner Carr
Commissioner Rogers
OGC (H Street)
GPA

ENCLOSURE 1



March 31, 1986

POLICY ISSUE

SECY-86-101

(Notation Vote)

For:

The Commissioners

From:

Victor Stello, Jr.
Acting Executive Director for Operations

Subject:

DESIGN BASIS THREAT - OPTIONS FOR CONSIDERATION

Purpose:

To provide the staff's evaluation of options identified in the staff requirements memorandum of February 7, 1986 concerning the design basis threat. An additional option has been included in response to Commissioner Bernthal's request in the memorandum of February 12, 1986 to discuss "contingency" planning.

Background:

On January 28, 1986 the staff briefed the Commission on the status of on-going activities related to current deliberations on the design basis threat. In response to the staff's presentation, the Commission requested a staff evaluation of specific options the Commission desired to consider further, along with a staff recommendation. Each option is identified and discussed below.

In addition, the issue of open vehicle gates and unchecked vehicle access at nuclear power facilities was raised at the January 28th meeting. In the interest of clarity, Enclosure 1 provides details concerning present practice regarding vehicle access controls at operating power reactors.

(The Commission's request regarding clearances for NUIARC personnel has been addressed by March 19, 1986 memo to the Chairman.

Options:

1. Await Other Agency Response

This option would permit an NRC decision regarding the design basis threat that would reflect national level policy guidance. The response might provide specific guidance for necessary actions and permit an NRC approach to the issue that is consistent with other federal agencies. This option would avoid the possibility of premature action or implementation of policy.

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ENCLOSURE 2

inconsistent with national guidance. On March 4, 1986 contact was made regarding the status of the response to issues raised by the NRC. The response indicated that the matter was being pursued with other federal agencies. No follow-on response date was identified.

The disadvantage of this option is that it could further delay a Commission decision. Also the possibility exists that the final response might not provide substantive guidance.

In regard to our interactions with the Department of Energy on comparability, a response to Secretary Herrington was forwarded on March 14, 1986. On the matter of comparability we recommended that the effort proceed without any further delay.

2. Vehicle Denial System for Roadway Access to Power Reactor Sites

This option would revise the design basis threat* and provide for a vehicle denial system only in the immediate area of existing vehicle gates. Supplemental denial systems include hydraulic barriers, concrete bollards (i.e., heavy posts anchored in the ground), planters or other structural obstacles that would provide increased penetration resistance near vehicle gates, and a possible deterrent effect. The remaining protected area perimeter would remain vulnerable to vehicle penetration.

Existing safeguards systems and plant structural design features at power reactors already provide some defenses against vehicle attack. Even though perimeter chain link fences will not prevent vehicle intrusions, the current requirement of prompt response by guards armed with shoulder-fired weapons would limit actions of intruders. Furthermore, staff believes that the design features that enable safety-related equipment to withstand floods and tornadoes, and structures to withstand earthquakes, etc., would also protect against damage from the vehicle used as a battering ram at most facilities. Accordingly, while the addition of vehicle barriers would improve the defensive posture of the site, they might not constitute a substantial overall increase in the public health and safety.

*10 CFR 73.1 would be modified to add a road vehicle as a tool for breaching vehicle gates. This modification would not include vehicle delivered explosives.

Cost estimates and an implementation plan are contained in Enclosures 2 and 3, respectively.

3. Vehicle Denial System for Land Access to Power Reactor Sites

This option would revise the design basis threat* and provide for a vehicle denial system for the land portion of the protected area perimeter. System components would include those identified in Option 2, plus cabling in the fence, and additional bollards and revetments. This system would deny vehicle access to the protected area at the existing protected area boundaries.

However, as noted under Option 2, operating reactors by virtue of design features already protect against natural disasters. These same features also provide some degree of protection against damage from a vehicle. The addition of a circumferential vehicle denial system would certainly increase the level of security, however would only incrementally contribute to the public health and safety for the same reasons stated under Option 2.

Cost estimates and an implementation plan are contained in Enclosures 2 and 3, respectively.

4. Security Response Planning (For protection against vehicle transported explosives at power reactors and fuel cycle sites - Commissioner Bernthal's February 12, 1986 memorandum)

This option would provide for security response plans without revising the design basis threat for both near and long-term contingencies in the event that any significant change to the domestic threat environment occurred. Such planning would enable licensees to quickly respond with temporary security measures to a new threat while preplanned permanent systems were installed. Near-term planning would include prearrangements for rapidly establishing temporary vehicle

*10 CFR 73.1 would be modified to add a road vehicle as a tool for breaching the protected area barrier at any point accessible to such a vehicle. This modification would not include vehicle delivered explosives.

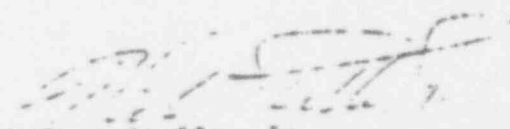
barriers, e.g., the use of readily available large trucks. Preplanning for permanent systems would require the licensee to identify those systems and complete the necessary engineering design, drawings, surveys and purchase order specifications. Such planning might not be possible at certain sites because public lands, highways, railroads and private property might fall within the required standoff zone.

Response plans would require periodic review and updating. Additional information is provided in Enclosures 2 and 3.

Backfit Considerations

Options 2, 3 and 4 are considered to be potential backfits under 10 CFR 50.109. However, it does not appear (although the required analysis has not been prepared) that these proposed new requirements meet the criteria necessary to support a backfit action.

Recommendation: In response to the Commission's request for a staff recommendation on the specific options identified by the Commission (and Commissioner Bernthal), the staff recommends Option 1 (Await Other Agency Response) and Option 4 (Security Response Planning).


Victor Stello, Jr.
Acting Executive Director for Operations

Enclosures:

1. Vehicle Access Controls
2. Estimated Cost of Options
3. Implementation of Options

Commissioners' comments or consent should be provided directly to the Office of the Secretary by c.o.b. Wednesday, April 16, 1986.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Wednesday, April 9, 1986, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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I. Background

During a January 28, 1986 Commission meeting on the design basis threat, Commissioner Bernthal stated that he had observed several instances of open vehicle gates and unchecked vehicle access into power reactor sites. This analysis addresses these concerns.

II. Current Requirements

Regulations in Part 73 require for plants with operating licenses that vital equipment be protected by at least two physical barriers, one of which is normally a fence around the perimeter. In addition, means to detect penetration of the protected area must be provided, usually by electronic devices. Commitments to these requirements are contained in licensee approved security plans. An open, unattended vehicle gate would be a severe violation of both the security plan and the regulations.

Other regulations in Part 73 require that personnel entering a protected area (including vehicle operators) be identified and searched prior to entry. The vehicle itself must be searched (cab, engine compartment, undercarriage and cargo area) for items that could be used for sabotage purposes, and upon entry into the protected area be escorted by a member of the security organization. Commitments to these safeguards are also found in licensees' security plans.

A licensee that permitted a vehicle to enter a protected area unchecked would be guilty of seven violations related to the rules governing:

- authorization for entry
- perimeter barrier
- intrusion detection
- driver identification
- driver search
- vehicle search
- vehicle escort

III. Comments From Regional Safeguards Personnel

Regional safeguards personnel have stated that they are unaware of any instances at plants with operating licenses of vehicle gates being "left open", or of vehicles entering a protected area unchecked and unsearched.* Standard procedure for vehicle entry involves:

- stopping the vehicle

*Certain allowances are made for security vehicles on duty, emergency vehicles, and dedicated licensee work vehicles.

- identifying and searching the driver and passengers
- searching the vehicle
- assigning an escort
- opening the vehicle gate under the surveillance of armed guards
- closing the gate

Note that employee vehicles are excluded from entry into the protected area.

IV. Conclusion

Based on information from Regional safeguards personnel no specific instances of uncited violations of vehicle access were identified. It should be noted that control requirements apply at the protected area of power reactors (and fuel plants) that have operating licenses. These requirements do not apply to plants under construction or at the boundary of the owner controlled area that surrounds but is outside of the site protected area.

ESTIMATED COST OF OPTIONS 2, 3 AND 4

OPTION 2. ROAD ACCESS DENIAL SYSTEM

- 0 HEAVY DUTY HYDRAULIC VEHICLE BARRIER SYSTEM (108")
WITH CONTROL, POWER SUPPLY, SIGNALS, INSTALLED AT
TWO LOCATIONS, PLUS
- 0 100 LINEAR FEET OF BARRIER EXTENSIONS COMPOSED OF
12" DIA STEEL PIPE FILLED WITH CONCRETE ON 4' CENTERS.
- 0 INITIAL COSTS INCLUDING MATERIALS, DESIGN, INSTALLA-
TION, TRAINING AND OVERHEAD.
\$100K TO \$200K PER FACILITY
- 0 ANNUAL MAINTENANCE COST
\$10K TO \$20K PER FACILITY
- 0 STAFF EFFORT FOR RULE DEVELOPMENT AND PLAN REVIEW
6 TO 8 SY TOTAL EFFORT

OPTION 3. PERIMETER ACCESS DENIAL SYSTEM (LAND ONLY)

- 0 HEAVY DUTY HYDRAULIC VEHICLE BARRIER SYSTEM AT
TWO LOCATIONS, PLUS
- 0 TWO 3/4" DIA STEEL CABLES ANCHORED AT 200 FT
INTERVALS, INSTALLED AROUND 60% (3000 FT)

0 CONCRETE REINFORCED REVETMENT OF 12" DIA STEEL
PIPE FILLED WITH CONCRETE, INSTALLED AROUND
40% (2000 FT) OF PERIMETER.

0 INITIAL COSTS INCLUDING MATERIAL, DESIGN,
INSTALLATION, TRAINING AND OVERHEAD.

\$500K TO \$1,000K PER FACILITY

0 ANNUAL MAINTENANCE COST

\$25K TO \$50K PER FACILITY

0 STAFF EFFORT FOR RULE DEVELOPMENT AND PLAN REVIEW
8 TO 10 SY TOTAL EFFORT

OPTION 4. PREPARATION OF SECURITY RESPONSE PLANS

0 PREPARE PLANS FOR NEAR-TERM, RAPID IMPLEMENTATION.

0 DEVELOP PLANS, ENGINEERING DRAWINGS, PROCUREMENT
SOURCES, BUDGET ESTIMATES, ETC, FOR PERMANENT
INSTALLATION AT THE EXTENDED STANDOFF DISTANCES.

0 DEVELOPMENT COST.

\$150K TO \$300K PER FACILITY

0 STAFF EFFORT FOR RULE DEVELOPMENT AND PLAN REVIEW

6 TO 8 SY TOTAL EFFORT AND \$500K CONTRACT SUPPORT

TRAVEL COSTS AND INSPECTION COSTS HAVE NOT BEEN INCLUDED IN STAFF EFFORT FOR THESE OPTIONS.

IMPLEMENTATION OF OPTIONS 2, 3 AND 4

OPTION 2. ROAD ACCESS DENIAL SYSTEM

- a. AMEND SECTION 73.1(a)(1), THE DESIGN BASIS THREAT FOR SABOTAGE, AND SECTIONS 73.55(c) AND (d), OR ISSUE ORDERS UNDER SECTION 2.204, TO REQUIRE INSTALLATION OF ROAD BARRIERS AND LATERAL EXTENSIONS. PROVIDE GUIDANCE AS TO ACCEPTABLE METHODS.
- b. STAFF REVIEW AND APPROVAL OF PLANS.
- c. INSTALLATION REVIEWED DURING ROUTINE INSPECTIONS.
- d. ELAPSED TIME THROUGH INSTALLATION - 34 MONTHS.

OPTION 3. PERIMETER ACCESS DENIAL SYSTEM

- a. AMEND SECTION 73.1(a)(1), THE DESIGN BASIS THREAT FOR SABOTAGE, AND SECTIONS 73.55(c) AND (d) TO REQUIRE UPGRADE OF COMPLETE PERIMETER BARRIER. PROVIDE GUIDANCE DOCUMENTS DEFINING VARIOUS ACCEPTABLE METHODS.
- b. STAFF REVIEW AND APPROVAL OF PLANS.
- c. SPECIAL INSPECTION OF FINAL INSTALLATION BY REGIONS.
- d. ELAPSED TIME THROUGH INSTALLATION - 40 MONTHS.

OPTION 4. PREPARATION OF SECURITY RESPONSE PLANS

- a. AMEND PART 73 TO REQUIRE PREPARATION OF PLANS
(NO CHANGE TO DESIGN BASIS THREAT). STAFF TO
PROVIDE GUIDANCE FOR PLAN DEVELOPMENT.
- b. STAFF REVIEW AND APPROVAL OF PLANS.
- c. IF NECESSARY, REQUIRE IMPLEMENTATION OF PLANS
BY ISSUANCE OF IMMEDIATELY EFFECTIVE ORDER.
- d. ELAPSED TIME THROUGH PLAN APPROVAL - 28 MONTHS.

ENCLOSURE 2



OFFICE OF THE
SECRETARY

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

June 16, 1988

MEMORANDUM FOR: Victor Stello, Jr.
Executive Director for Operations

FROM: *a. Bates*
Samuel J. Chilk, Secretary

SUBJECT: SECY-88-127 - CONTINGENCY PLANNING
TO COUNTERACT POSSIBLE SURFACE VEHICLE
THREAT

This is to advise you that the Commission (with all Commissioners agreeing, except as noted) has approved the following:

- NO ACTION* 1) For Category 1 fuel facilities, no further actions are necessary to protect against a surface vehicle bomb;
- AECD/NRR* 2) Development of generic contingency plans for power reactors for use by the NRC staff in the event that a vehicle bomb threat arises;
(EDO) (SECY Suspense: 12/31/88)
- NRR* 3) A requirement for licensees to develop short range contingency plans (Option 3A). (Commissioner Carr disagrees and does not believe the Commission needs to impose any requirements, short or long range on power reactor licensees.)
(EDO) (SECY Suspense: 12/31/88)
- NRR* 4) The staff should complete review of the issues related to the water borne vehicle bomb and provide a paper to the Commission by December 31, 1988.

Chairman Zech also believes that the NRC staff should develop guidance for licensees on what would be envisioned in long range contingency plans, and he would encourage licensees to consider option 4, with the view that some are more vulnerable than others.

Commissioner Rogers would encourage, but not require, licensees to pursue option 3b on long range contingency planning.

Additional comments of Commissioners were provided to you with copies of their vote sheets.

cc: Chairman Zech
Commissioner Roberts
Commissioner Carr
Commissioner Rogers
OGC
GPA
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ENCLOSURE 3