



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

December 29, 1977

MEMORANDUM FOR: Ralph Jones, Chief  
Material Protection Standards Branch (SD)

FROM: L. J. Evans, Jr., Chief  
Requirements Analysis Branch (SG)

SUBJECT: MAJOR POLICY ISSUES CONCERNING THE PHYSICAL PROTECTION  
UPGRADE RULE

I have reviewed the draft issue statements and staff position paper which you forwarded to me Tuesday afternoon. Attached as Attachment 1, please find a draft cover memorandum which we can use to forward the final version of the major issues and staff positions to Minogue and Smith.

Concerning the policy issues and staff positions, I wonder if we would not do better forwarding to Minogue and Smith, the issue outline which will be used as the basis of the NUREG report? We could then replace the response consideration sections of the issue outline with the staff positions included in your draft as refined in Attachment 2 to this memorandum. If you do not wish to do that, then Attachment 2 ought to be used as the issue document which will be forwarded to Smith and Minogue. The only major changes to your initial draft in Attachment 2 are the deletion of your third issue and its inclusion under the second issue and the modification of your fourth issue to more nearly represent the public comments. If this is not acceptable, then we could utilize Attachment 3 as the staff position in response to your fourth issue.

Please give me a call to discuss this once you have had a chance to review the revised issues and staff positions.

*L. J. Evans, Jr.*  
L. J. Evans, Jr., Chief  
Requirements Analysis Branch

MEMORANDUM FOR: Robert B. Minogue, Director  
Office of Standards Development

Clifford V. Smith, Jr., Director  
Office of Nuclear Material Safety and Safeguards

THRU: Robert F. Burnett, Director  
Division of Safeguards

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FROM: Ralph J. Jones, Chief  
Material Protection Standards Branch

L. J. Evans, Jr., Chief  
Requirements Analysis Branch

SUBJECT: MAJOR POLICY <sup>ISSUES</sup> CONCERNING THE PHYSICAL PROTECTION  
UPGRADE RULE

On July 5, 1977, a draft Physical Protection Upgrade Rule was published for public comment. The public was given until September 19 to comment on the draft rule. Thirty-two (32) letters of comment were received from 28 commentators, some having submitted more than one letter. These comments have been categorized into major issues and secondary issues. These issues have been analyzed and staff positions regarding them have been developed.

Most of the comments are either readily handled by modifying the draft rule or by providing an explanation. However, some of the major issues listed in the attached document have such significant policy ramifications, it was felt that senior management input was necessary prior to the development of firm staff positions. Once you have had an opportunity to review the attached, it is recommended that a meeting be held to discuss the policy implications of these major issues.

DRAFT

12/28/77

ISSUES FOR POLICY DECISION

## 1. Is the threat over or under conservative?

Licensees comment that the threat level is not supported by evidence. Staff Position - Commission decision. Should there be any change in the threat statement? The Contingency Planning Branch study of the threat, undertaken in response to Mattson Task Force recommendations, should provide a basis for making this decision. The Upgrade Rule can be rewritten as appropriate.

## 2. Can the threat be given more definitive bounds?

Licensees comment that adversary characteristics and resources are not bounded, in particular, there is no limit given for internal conspiracy.

Staff Position - The statement of considerations should make clear that the purpose of the described threat is to define the general character of the domestic safeguards challenge. It is not intended to be an exhaustive statement of the current perceived threat but rather a general level or design threat against which the safeguards system is to be designed. No additional attributes or characteristics should be implied. The licensees' system, when designed to the level specified in the remaining sections of the Upgrade Rule and in accordance with the more detailed licensee guidance to be provided separately as NUREG documents and licensee guides, will be responsive to a range of threats with various levels of assurance of success. However, the conspiracy threat does need to be bounded in

some manner. This is probably best achieved by providing that an access clearance program, coupled with safeguards measures employed to thwart theft of formula quantities of SNM by a single insider, is satisfactory for persons with clearances. Where possible conspirators do not have such clearances, it is necessary to employ additional safeguarding techniques against internal conspiracy.

3. Can it be determined when a safeguards system adequately protects against the stated threat?

Licensees commented that they would have no way of knowing when they had achieved adequate protection.

Staff Position - The licensee will have several ways of knowing when he has achieved adequate protection against the stated threat.

First, the regulation presents two forms of initial guidance for making this determination. One form of this regulatory guidance are the statements of what capabilities the safeguards system must be able to achieve as well as the functions which the system must perform in order to satisfy the given capabilities. Another form of this regulatory guidance are the statements of what subsystems, elements, and components a safeguards system will usually have to contain in order to perform the given functions.

Second, more detailed guidance will be provided separately as NUREG Reports and Regulatory Guides. Such design guidance now is in preparation. It will provide detailed component by component analysis of safeguards physical protection systems directly related through matrices and logic

networks to the performance capabilities. Quantitative performance specifications would be identified for individual components or groups of components so that cumulative system reliability could be developed from the component parts. In either case enforcement would be against NRC approved safeguards plans designed and submitted by the licensees. This method will be closely related to the judgemental process NRC will use in determining the adequacy of safeguards systems.

4. Should the NRC attempt to get legislation to permit deadly force to be used in protection of SSNM?

Licensees suggested this approach to solve problem of conflict with state and local law regarding use of deadly force and heavier armament for guards.

Staff Position - The NRC should not attempt to get legislation to permit escalation of the use of deadly force or overriding state laws. The recent amendments to the regulations relating to guard response, the efforts to inform LLEA of how their response is needed and can be of value, and the proposed guard training criteria should be sufficient to resolve the issue of deadly force. This issue will be more fully addressed in a Commission paper being prepared by NMSS in response to a Commission request of 11/17/77.

5. Should the NRC reconsider the use of Federal Forces? For fixed sites? For transport?

Licensees comment that the level of force required by the rule is beyond that that can be expected of private companies. This is particularly the case in transport where licensees say the business isn't enough to make it worthwhile.

Staff Position - The Security Agency Study done, in compliance with the Reorganization Act of 1974, concluded that licensee forces properly trained and equipped could be as effective as Federal forces. The industry has changed some since that time, especially in the transport area where DOE has taken over the major part of the transport of SNM now moving among licensed facilities. In addition, a different statement of the threat has been made since the study report was issued. Should the Commission reopen this question? Legislation would be required to establish such a force or even to permit DOE to pick up the remainder of the transport for that SNM not government owned.

6. Should the NRC attempt to provide physical protection of import and export shipments outside the U. S. through NRC regulations?

Comments indicated that protection outside the U. S. should be arranged through international agreements rather than unilateral regulations.

Staff Position - It is difficult to see how NRC regulations can be enforced with a foreign organization. However, if such regulations provide a framework to assist in developing the requirements to be included in international agreements then they should be included. The wording should be developed in recognition of the role the requirements would play in such agreements.

3. Should performance capabilities be required or should they be presented as the framework within which system specifications are required to meet the specified threat?

Licensees commented that they would have no way of knowing when they had achieved adequate protection.

This issue raises a very fundamental question: Is NRC primarily concerned about how well safeguards perform or is its primary concern one of assuring that licensees utilize certain equipment and procedures? Twice in the recent past, the Commission has decided that its prime concern is how well the safeguards system performs. The first time this decision was made occurred when NRC adopted the NRC/ERDA Joint Task Force Report in 1976 and the second time was when the Commission published the draft Upgrade Rule for public comment on July 5, 1977.

This draft rule established, as its legal requirements, that the safeguards system must protect against a stated threat level by achieving given capabilities. In addition, it presented, as a partial reference system, various subsystems, elements and components which are normally necessary to protect against the stated threat level. These system specifics were not made requirements so that the licensee would have the flexibility to propose alternative systems which would be more cost-effective for his site than those stated in the regulation. In addition to losing this flexibility, <sup>making</sup> these system specifications absolute requirements would result in several other problems.

First, no matter how complete one tries to make the list of equipment and procedures which would be specified in the regulation, it can never be made so comprehensive that it will cover all contingencies and site-specific cases. This has been demonstrated by the existing regulations, which specify subsystems, elements and components, and <sup>which</sup> have resulted in constant ratcheting

Second, at some point in the regulatory process, NRC must make judgments regarding the adequacy of licensee safeguards systems. If only technical compliance with system specification requirements are judged, safeguards may degenerate and become inadequate without timely warning. Such was the case in early 1976 when the Safeguards Division Director wrote that he could not state that licensee safeguards were adequate because they had only been judged for technical regulatory compliance and not for overall adequacy.

However, while no commentators suggested <sup>not to require that</sup> ~~that the threat against which~~ the licensee system <sup>be able to S/R against the stated threat</sup> ~~should perform not be required,~~ it has been suggested <sup>have suggested thus</sup> by some staff members <sup>make the only UC done</sup> that ~~it not be~~ and that instead the system specifications should be <sup>^</sup> requirements. It is stated that making the system specifications the requirements would make the rule easier to interpret and to enforce. <sup>it is further</sup>

<sup>propose that</sup> The present threat statement <sup>should be considered as</sup> is essentially <sup>^</sup> a goal, with the performance capabilities being supportive objectives to that goal. <sup>finally, it is stated that</sup> Without quantification they cannot be considered true performance requirements. <sup>^</sup> The goals would be presented not as requirements but as the rationale supporting the detailed system requirements. <sup>^</sup> Alternatively, the performance capabilities could remain as the legal requirements with guidance being provided separately to show how a system could be designed to comply. Such design guidance now is in preparation. It will provide detailed component by component analysis of safeguards physical protection systems directly related through matrices <sup>^</sup> and <sup>^</sup> network to the performance capabilities. Quantitative performance specifications would be identified for individual components so that cumulative system reliability could be developed from the component parts. In either case enforcement would be against NRC approved safeguards plans designed and submitted by the licensees.



## ISSUES FOR POLICY DIVISION

### 1. Is the threat over-conservatives?

Licensees comment that the threat level is not supported by evidence. Staff Position-Commission decision. Should there be any change in the threat statement?

### 2. Can the threat be given more definitive bounds?

Licensees comment that adversary characteristics and resources are not bounded, in particular, there is no limit given for internal conspiracy. Staff Position-The statement of considerations should make clear that the described threat is not the perceived threat but rather a general level or design threat against which the safeguards system is to be designed. The threat statement is more a safeguards goal than a requirement. No additional attributes or characteristics should be implied. The licensees system when designed to the level specified will be responsive to a range of threats with various levels of assurance of success. Should more specific bounds be identified in the regulation for threat characteristics? The conspiracy threat should be limited to two insiders or removed from the threat statement on the basis that an access clearance program coupled with other protection components essentially eliminates conspiracy as a valid threat characteristic.

### 3. What credit can be given clearances in modifying the threat or considering it protected against?

Staff Position-A clearance program could be given sufficient credit to eliminate the insider conspiracy from the threat.

4. Should performance capabilities be required or should they be presented as the framework within which system specifications are required to meet the specified threat?

Licensees commented that they would have no way of knowing when they had achieved adequate production.

Staff Position-The rule as published for comment presented the general performance requirement and its associated capabilities as the legal requirements of the regulation. The system specifications were presented as the reference system but not the required system. This is difficult to interpret and to enforce. A more definitive approach would be to present required system specifications presented in the context of a defined threat and identified capabilities as goals to be met. The present threat statement is essentially a goal with the performance capabilities being supportive objectives to that goal. Without quantification they cannot be considered true performance requirements. The goals would be presented not as requirements but as the rationale supporting the detailed system requirements. Flexibility could be built in by permitting equivalent protection in the context of the goals as alternates to the system requirements. Alternatively the performance capabilities could remain as the legal requirements with guidance being provided separately to show how a system could be designed to comply. Such design guidance now is in preparation. It will provide detailed component by component analysis of safeguards physical protection systems directly related through matrices and network to the performance capabilities. Quantitative performance specifications would be identified for individual components so that cumulative system reliability could be developed from the component parts. In either case enforcement would be against NRC approved safeguards plans designed and submitted by the licensees.

5. Should the NRC attempt to get legislation to permit deadly force to be used in protection of SSNM?

Licensees suggested this approach to solve problem of conflict with state and local law regarding use of deadly force and heavier armament for guards.

Staff Position-The NRC should not attempt to get legislation to permit escalation of the use of deadly force or overriding state laws. The recent amendments to the regulations relating to guard response, the efforts to inform LLEA of how their response is needed and can be of value, and the proposed guard training criteria should be sufficient to resolve the issue of deadly force. In no case should the NRC take a position of overriding state or local laws in this area.

6. Should the NRC reconsider the use of Federal Forces? For fixed sites? For transport?

Licensees comment that the level of force required by the rule is beyond that that can be expected of private companies. This is particularly the case in transport where licensees say the business isn't enough to make it worthwhile.

Staff Position-The Security Agency Study done in compliance with the Reorganization Act of 1974 concluded that licensee forces properly trained and equipped could be as effective as Federal forces. The industry has changed some since that time, especially in the transport area where DOE has taken over the major part of the transport of SNM now moving among licenses facilities. In addition, a different statement of the threat has been made since the study report was issued. Should the Commission reopen this question? Legislation would be required to establish such a force or even to permit DOE to pick up the remainder of the transport for that SNM

not government owned.

7. Should the NRC attempt to provide physical protection of import and export shipments outside the U.S. through NRC regulations?

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Staff Position-It is difficult to see how NRC regulations can be enforced with a foreign organization. However, if such regulation provide a framework to assist in developing the requirements to be included in international agreements then they should be included. The wording should be developed in recognition of the role the requirements would play in such agreements.