

March 1, 1978

SECY-78-124

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COMMISSIONER ACTION

For: The Commissioners

From: James R. Shea, Director
Office of International Programs

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

Thru: *for* Executive Director for Operations *C. J. D.*

Subject: DRAFT ACTION PLAN TO STRENGTHEN IAEA SAFEGUARDS

Purpose: Commission review of and guidance on the subject draft Plan.

Discussion: SECY-77-614, dated December 13, informed you of interagency activities related to the subject Plan and forwarded a copy of the first draft which was based primarily on NRC input.

SECY-78-34, dated January 20, informed you of IP and NMSS agreed-upon modifications to the first draft. Most of these suggestions were provided to State and other agencies at the December 20 meeting of the Interagency Steering Group on International Safeguards (ISG).

Three other suggested modifications, which were still under staff review at the time of the ISG meeting, were subsequently provided to State informally, but not in time to be considered for incorporation in the latest draft (discussed below). These three items are noted at Appendix A. The staff has now formally provided these and other comments (Appendix C) to the Executive Branch as NRC staff comments.

By memorandum of February 8 from Mr. Chilk to Mr. Gossick, the staff was requested to submit the safeguards Action Plan plus a decision paper setting forth differences that exist on the Plan, if any. This paper responds to the request for an action plan.

Contact:

1. A. Guhin, IP 492-7866
2. S. Sherr, NMSS 427-4004

Classified by *100/1000* *100/1000* (Name)
(Title)

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Discussion:

At a January 6 meeting of the ISG Working Group on the Action Plan, a second draft (January 4 version) of the Action Plan was distributed to the attendees (Appendix B). This draft was discussed briefly at a February 3 meeting of the ISG Working Group and the participants agreed on the following schedule for the Action Plan:

1. Comments on the draft Action Plan to be forwarded to the Arms Control and Disarmament Agency (ACDA) by February 17. (It was agreed that NRC comments would be IP and NMSS agreed-upon comments and that they would not necessarily represent the views of the Commission nor all staff comments.)
2. A revised draft to be circulated to the Working Group on March 3.
3. A meeting to discuss the revised draft and implementation activities to be held on March 10. (The Group intends to elaborate milestones for proposed actions at this meeting. The staff will communicate these to the Commission as soon as they are available.)

The staff's comments on the January 4 draft are at Appendix C. If the items in Appendix A are incorporated and our preliminary comments in Appendix C accommodated, the staff's view is that the plan provides an excellent focus on the basic steps needed to strengthen IAEA safeguards. However, as directed in a recent Commission meeting, NMSS is preparing a paper to identify what information it believes is needed to make independent evaluations of the effectiveness of IAEA safeguards implementation on a country-by-country basis. After the Commission decides what additional information it may wish in this regard, if any, other items may need to be included in NRC suggested revisions to the Action Plan.

Other items of interest to the Commission discussed at the February 3 meeting were:

1. The working group was informed that Ray Parsick (IAEA, Evaluation Unit) is currently preparing the 1977 SSIR for consideration at the June Board of Governors meeting and that it will report essentially the same kinds of problems as those identified in the 1976 SSIR.

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Discussion:
(Continued)

2. NRC suggested that the Working Group on the Action Plan regularize its activities by establishing a secretariat, among other things, to monitor the progress of action proposed by the group. (This suggestion is still under consideration.)

The Action Plan will no doubt continue to evolve and agency comments can be made at any time. However, we consider it important to have further inputs in the formative stages of the Plan. Thus, we request that the Commission review the draft Plan (Appendix B), as well as the staff's comments (Appendices A and C) and provide both guidance and any Commission comments so that these may be factored into the process now.

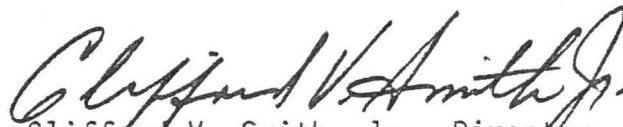
Recommendation:

That the Commission review and provide guidance and comments on the draft Action Plan.

Coordination:

OPE concurs. OGC and ELD have no legal objection.


James R. Shea, Director
Office of International Programs


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

Enclosures:

1. Appendix A - Staff suggested items for inclusion in Action Plan (CONFIDENTIAL)
2. Appendix B - Draft Action Plan dtd 1/4/78 (CONFIDENTIAL)
3. Appendix C - Staff comments on 1/4/78 draft (CONFIDENTIAL)
4. Appendix D - Suggested ACDA revision of paragraph 4, part A of draft

DISTRIBUTION:

Commissioners
Commission Staff Offices
Exec. Dir. for Ops.
Secretariat

NOTE: Commissioner comments should be provided to the Office of the Secretary by close of business Monday, March 13, 1978.

Commission staff office comments, if any, should be submitted to the Commissioners NLT March 7, 1978, with an information copy to the Office of the Secretary.

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APPENDIX A

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APPENDIX A

STAFF SUGGESTED ITEMS FOR INCLUSION IN ACTION PLAN

- *1. That the U.S. undertake an analysis of the IAEA's information categorization system relating to safeguards confidential data to determine the nature of the data and the constraints under which the Agency must handle it.
- *2. When Agreements for Cooperation are negotiated, a provision should be included requiring an importing country to provide the U.S. with all information relevant to IAEA inspections problems if the State is reported to the Board of Governors as having serious deficiencies in its safeguards implementation.
- **3. The U.S. should bilaterally encourage states to upgrade their systems of material accounting and control and to remove any obstacle to effective implementation of international safeguards. In this light, the U.S. should establish a technical assistance program in which U.S. material accountancy experts are provided to states to assist them in developing or improving their systems of material accounting and control.

*For inclusion under item A, "Actions to Assure Adequate Information Flow."

**For inclusion under item C, "Related Actions."

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APPENDIX B

MEASURES TO STRENGTHEN IAEA SAFEGUARDSPROPOSED ACTION PLAN

1. IAEA safeguards, in combination with Governmental political commitments and assurances, are key elements of non-proliferation policy and international peaceful nuclear cooperation. IAEA safeguards provide a technical basis for assuring all nations that nuclear equipment and materials are not being used for nuclear explosives or to further any military purpose. Their objective is deterrence of diversion to such uses through application by the Agency of verified material accountancy, surveillance and containment designed to reasonably ensure timely detection of diversion of any significant quantities of nuclear materials for unauthorized use. The application of these measures by the Agency at the present time does not in all cases provide the desired degree of sensitivity, certainty or timeliness of detection.

The United States believes the effective application of Agency safeguards is only one of several elements for determining that a nation is not misusing United States nuclear cooperation or engaged in activities to develop nuclear explosives or to develop nuclear materials and equipment for military purposes. However, deterrence of unauthorized diversion requires that

Agency safeguards be effective and that they are perceived as credible. Ensuring a sound foundation for this perception requires continued United States support, as well as actions and initiatives designed to improve the effectiveness of Agency safeguards to keep pace with the worldwide growth of nuclear power and development of nuclear technology.

2. The recent Special Safeguards Implementation Report (SSIR) prepared by the Agency Secretariat provides a critical analysis of Agency safeguards and provides a unique opportunity for focusing United States support and other Agency assets to correct recognized deficiencies. The following action plan has been formulated in order to coordinate ongoing United States efforts and identify additional U.S. efforts aimed toward correcting specific deficiencies noted in the SSIR, implementing its recommendations and, more generally, ensuring that the Agency will continue to meet its growing responsibilities. The plan attempts to maximize the impact of the United States efforts to strengthen and improve the general effectiveness of Agency safeguards while recognizing that such efforts must be carefully orchestrated so as to:

- (a) Bring about real improvement in future Agency capability without undermining the confidence of states

- in the current effectiveness of Agency safeguards; and
- (b) Influence, and as appropriate, provide assistance to states to take necessary steps to correct deficiencies in national systems that impede effective application of Agency safeguards without unnecessarily raising issues of national sovereignty either with regard to the Agency role or the United States role in bringing about such corrective actions.

The following list is not all inclusive, but is intended to prompt development of a comprehensive list of initiatives. It would be desirable to have a working group develop a comprehensive list, prioritizing initiatives and produce a work plan for accomplishing these tasks.

A. Actions to Assure Adequate Information Flow

1. Strongly support regularizing SSIR; seek to have SSIR be as forthcoming as possible to include more detailed technical information on the nature of deficiencies (including limitations on accounting principles, on inspector access and on cooperation by facility operators in implementing IAEA safeguards), on recommended corrective actions and

- on the status of corrective actions recommended in previous SSIRs; avoid identification of states in SSIR;
2. Regularize discussion of SSIR by the Board of Governors. Board should establish target dates for correction of deficiencies or initiation of programs to correct deficiencies, as appropriate;
 3. The United States should encourage the Director General to send inspection letters to each country (as per INFCIRC/153, Article 90) summarizing the results of inspections, outlining any deficiencies found, and recommending steps to correct them. The countries, in turn, should be expected to inform the Agency of steps they will take (or have taken) to eliminate the problems;
 4. a. In the case of noncooperative (problem case) states and involving issues or deficiencies of significant concern, encourage the Director General, apart from the SSIR, to bring these issues or deficiencies, as they are documented to the attention of the Board of Governors. Both INFCIRC/153 and INFCIRC/66 contain stipulations that specific information may be given to the Board to the extent necessary for the Agency to fulfill its responsibilities.

- b. In the case of recalcitrant states and involving issues or deficiencies of a serious nature, encourage the Director General, apart from the SSIR, to bring these issues, as they are documented to the attention of the Board of Governors under Article XII-C of the Agency statute, with specific reference to problems identified in inspecting the State. The Director General should, if possible, define what should be reported automatically (i.e., define the thresholds for "serious issues").
5. Since an efficient national material control and accounting system is the foundation of an effective international safeguards system, the U.S. should assist the Secretariat in preparing a material control accounting guide, similar to INFCIRC 225 on physical protection, to provide guidelines to countries in establishing their national system of material accountability and control (SSAC); encourage the Agency to convene a panel of experts, or other appropriate working group to assist in completing, reviewing and/or endorsing a guide.

B. Actions to Increase the Effectiveness of
IAEA Safeguards

1. a. Continue to assist the Secretariat in preparing the Safeguards Technical Manual as a standardized basis for inspection and evaluation procedures, and seek policy-level endorsement of the Technical Manual within IAEA. The United States has already provided inspection and evaluation criteria (i.e., technical objectives) to the Secretariat. These should be regularly reviewed and refined within the United States Government on an interagency basis with a view to keeping these criteria up to date and to maintaining a firm technical basis for the criteria;
- b. We should give continued high priority to assuring that the Agency can provide adequately effective safeguards to the most sensitive aspects of the fuel cycle, involving weapons-usable materials. A hard, objective analysis is essential on how effective safeguards can really be at a reprocessing plant (excluding the abrogation scenario from consideration). A pressing need also exists to develop and perfect safeguards for enrichment plants.

2. Consult with selected governments and continue to use fora such as SAGSI for the purposes of (a) gaining wider acceptance of the above US-favored criteria and of (b) encouraging coordinated approaches to the Secretariat on these and other matters affecting safeguards effectiveness by governments sharing common views with the US;
3. Support increases at the earliest possible dates in the number of IAEA safeguards staff to meet growing needs, and determine ways for assuring that top-qualified staff are employed. (The United States can set an example by assuring that only the highest qualified people from the United States are employed by the Agency. This requires more emphasis upon background experience in plant operation and an effort to inform US industry of Agency inspector vacancies available.) This may call for a more active United States intervention with the Secretariat, possibly in coordination with other concerned states, during the preparation of the annual budget. We

should encourage a resident inspector program (regional Agency Offices) primarily for Pu and HEU facilities and CANDU reactors, examine utilization of cost-free experts to alleviate indirectly shortages, and greater United States assistance in training inspectors; efforts should be made to reduce political sensitivities related to accepting competent IAEA inspectors and the IAEA should be encouraged to hire with increased emphasis on merit and less concern for geographical distribution. A pool of talent should be developed at all ability levels;

4. Continue to support improved safeguards effectiveness through R&D on safeguards equipment and techniques to overcome technical inadequacies. Review regularly the technical support program and research programs beginning with current programs, to ensure that they are responsive to deficiencies noted in the SSIR and recommend any actions needed to reorient or accelerate ongoing or proposed projects to ensure maximum United States assistance in Agency efforts to correct more significant deficiencies on an expeditious basis;

5. Continue to support Agency efforts to bring NPT safeguards agreements with member states into force on a timely basis and ensure that subsidiary arrangements and facility attachments uniformly comply with adequate inspection and evaluation criteria. This is particularly true in the case of IAEA/EURATOM and IAEA/Japan agreements where the parties have sought less stringent procedures than the existing and proposed international and national safeguards systems.
6. Seek IAEA review of its management practices and procedures with a view to ensuring that IAEA safeguards are implemented as effectively and efficiently as possible; and that safeguards inspection procedures conform to stated technical objectives.
7. US bilateral diplomatic and technical support is crucial to successfully realizing Agency broad objectives and within these objectives, specifics of the US Action Plan. This need is reflected by example such as the October US-Euratom meetings in Luxembourg and the recent US-GOC meeting in Ottawa concerning the US position on Principles of Safeguards

Effectiveness. Bilaterals in the coming months should be undertaken with members of the European Community, on specifics of the US Action Plan in support of Agency-improved safeguards effectiveness.

8. US Government agencies should review their staff procedures and assignments to make sure that competent staff are able to concentrate adequate effort on international safeguards policy matters.
9. Through the IAEA, ~~industry~~ ^{and US industry,} and its member states, the US should seek to include IAEA safeguards features, devices and instrumentation directly into the commercial design considerations of utility companies, architect-engineering consulting firms and nuclear system suppliers. Commercialization of IAEA safeguards should become the analog to safety in design of power plants and other nuclear facilities, deriving from both the influence of the regulatory institutional bodies and the vested interests of the operator.
10. A US interagency study should be undertaken to determine what role, if any, the IAEA can play in developing more rigorous and uniform

standards governing the transport of weapons-usable materials.

C. Related Actions

1. Continue to encourage completion of the INFCE reports at an early date. The INFCE undertaking is highly important to the question of whether effective safeguards can be applied to all nuclear cycles and whether some fuel cycles are more susceptible to diversion than others;
2. Seek, over the longer term, through the Nuclear Suppliers Group, to have universal compliance with developed Agency guidelines for an SSAC. At the time Agency guidelines are available, study the possibility of such compliance being made a condition for export, and include appropriate provisions in new or amended United States agreements for cooperation.
3. Strongly promote universal adherence to the NPT and full-scope safeguards as the means for broadening and thereby upgrading existing INFCIRC 66 arrangements that, in some cases, may confine effective application of IAEA safeguards. In connection with re-negotiating agreements for cooperation, seek, as a minimum,

to upgrade INFCIRC 66 safeguards arrangements to meet or exceed INFCIRC 153 requirements in meeting United States policy requirements that all nuclear activities be under Agency safeguards as a condition for continued United States nuclear cooperation. The primary need is to negotiate some form of full scope safeguards agreements in order to meet the US or other supplier requirement, and to assure the Agency's right to apply effective measures including the use of containment and surveillance devices and continuous inspection where appropriate.

4. Accelerate efforts to implement the United States Voluntary Offer and ensure compliance with Agency criteria and procedures in facility attachments as models for other NPT parties to the extent possible. Possibly *qualify* develop policy position on the degree of safeguards commitments, e.g., mandays of inspections, to be included in facility attachments; foster through example, the publication of at least the general part of the Subsidiary Arrangements.

APPENDIX C

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APPENDIX C

STAFF COMMENTS ON DRAFT ACTION PLAN
OF
JANUARY 4, 1978

1. Item A4 (a and b) - We believe these paragraphs could be rewritten as a single item. If the plan is to make a distinction between a "noncooperative state" and a "recalcitrant" state, the differences should be defined. [A revised paragraph was informally tabled at the February 3 Working Group meeting (Appendix D).]
2. Item B1 (b) - This paragraph presents the problem without really identifying what remedial action is to be taken beyond an analysis of safeguards on reprocessing plants. The paragraph should identify what measures the U.S. Government proposes to take.
3. Item B3 - A more definitive statement clarifying the type of facility that should have a resident inspector is needed. We fully agree that the U.S. should encourage a resident inspector program. In this regard, we believe the program should focus on having resident inspectors at fuel processing and fabrication plants utilizing significant quantities of HEU or Pu, reprocessing plants, enrichment plants, and perhaps CANDU reactors. However, we do not believe resident inspectors would be needed at test and research reactors fueled with Pu or HEU or at plants involved in research and development activities unless significant quantities of these materials (tens of kilograms) are possessed or processed each year.

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4. Item B7 - This proposal should perhaps be expanded to include bilaterals with other countries which support strengthening safeguards after initial consultations with the EC. Why are Canada and Japan not included in initial consultations?
5. Item B9 - This paragraph needs substantial clarification, particularly the second sentence, and identification of the key features to be pursued.
6. Item B10 - While we do not disagree with the proposed study of possible ways of strengthening standards for the transport of weapon usable materials, we seriously question the inclusion of this item, since it refers to physical protection matters which are outside the present scope of the Action Plan. If the item is to be included, the group should consider a range of other matters related to physical security.

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APPENDIX D

US Action Plan

Suggested revision of paragraph 4, part A
Preliminary Draft

4.a) The United States should attempt to regularize the flow of information from the Director General to the Board of Governors in order that the Board can fulfill its responsibilities under Paragraphs 18 and 19 of INFCIRC/153. Paragraph 18 permits the Board to call upon a State to take an action "essential and urgent" in order to ensure verification that nuclear material...is not diverted....." Paragraph 19 indicates that the Board should consider "relevant information reported to it by the Director General" in order to "verify that there has been no ^{or} diversion of nuclear material..." If the Board finds that it is unable to make this verification it "may", or presumably may not, choose to "make the reports provided for in paragraph C of Article XII of the Statute..." (These reports are to the General Assembly and Security Council of the UN and to all members.)

/Note: Article XII includes another procedure which provides less discretion to the Board and to the Director General. It says:

The inspectors shall report any non-compliance to the Director General who shall thereupon transmit the

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report to the Board of Governors...
The Board shall report the non-
compliance...
(Emphasis added.)]

The circumstances that the Director General should report to the Board of Governors as soon as possible would be at least the following:

1) Possession of nuclear material in a form or assay other than that which it was the facility's declared purpose to produce. E.g.:

- i) the presence of plutonium metal in a facility whose declared purpose was to produce plutonium nitrate solutions
- ii) the presence of uranium with a U_{235} assay greater than 5% in an enrichment facility whose declared purpose was to produce material with assays no greater than 5%.

2) Production of nuclear material significantly in excess of the stated nominal capacity.

3) Undeclared changes in the facility design.

4) Declared changes in the facility design for which the approval required in Article XII-A would not have been granted initially.

Note: The basis for such reporting is found in several places: 1) Paragraph 43 which requires "identification

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of the facility, stating its general character, purpose, nominal capacity..." 2) Article XII which allows the Agency to examine and "to approve" the facility design 3) Paragraph 28 which provides that an objective of safeguards is to detect the diversion of nuclear material to "purposes unknown."

5) Willful interference with stipulated AGENCY procedures e.g., any interference with Agency surveillance devices, such as seals, or failure to provide for the ready access of inspectors to necessary locations and data.

6) Protracted or repeated failure to rectify equipment ^aflows which increase the limit of error of material unaccounted for significantly. ✓

7) All factors which significantly increase the routine inspection effort beyond that expected on the basis of the facility attachment.

8) Failure to make the reports, special reports, or report amplification or clarification called for in INFCIRC/153 in a timely fashion.

b) The US should attempt to formalize the procedures to be used if there is a finding of non-compliance. Article XII does not specify either the sequence or the timing of the required reports. Specifically the report to the

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Board should be immediate and concurrent with the "call upon the recipient state or states to remedy forthwith any non-compliance..." Thought should be given to the provision of secure and rapid data links from the Director General to the members of the Board of Governors.

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