

NUCLEAR EXPLOSIONS FOR PEACEFUL PURPOSES
Guidelines for international observation
by the Agency

Memorandum by the Director General

FCO
Version
(with their
comments &
amendments)
received 1/2/72

1. The Board may recall that the Working Group on International Observation of Peaceful Nuclear Explosions which met in November 1970 recommended that the Agency should draft a "comparatively brief general IAEA Document" on the manner in which the IAEA would exercise the appropriate international observation, and that the document should be "somewhat like the Inspectors Document".¹⁾
2. The Board further agreed in February 1971²⁾ that such a document should be based on the Group's report which should be circulated to Member States for possible comments. This was done on 10 March 1971 and acknowledgements have been received from the Democratic Republic of Congo, Ireland, Guatemala, New Zealand, Panama, Philippines, Poland, Thailand and Vietnam.

Argentina, Denmark, the Federal Republic of Germany, Pakistan, South Africa and Switzerland submitted comments or suggested related topics for future discussion by the Agency. *Excluded. Their comments can be found in Annex A.*

3. The Director General has prepared in Annex B a draft document which takes into account these comments which are within the narrow scope of international observation.

The purpose of this document is to set forth the general guidance under which appropriate international observation, hereinafter called "observation", of the type called for by Article V of the Non-Proliferation Treaty would be provided by the Agency for nuclear explosions carried out for peaceful purposes by a Nuclear-Weapon State in the territory of a Non-Nuclear Weapon State or States.

4. In order to implement these guidelines a specific agreement for observation, hereinafter called the "observation agreement", ~~is to~~ ^{should} be concluded for each peaceful nuclear explosion project ~~among~~ ^{between} the supplier Nuclear Weapon State, the

1) See INFCIRC/39

2) See GOV/1433

Non-Nuclear Weapon State or States in whose territory or territories the nuclear explosion or explosions would be carried out, and the Agency.

5. The guidelines set forth in this document and the procedures for which it provides are established for the information of the Member States, to enable them to determine in advance the circumstances and the manner in which the Agency would provide for observation, and for the guidance of the organs of the Agency itself, in order to enable the Board of Governors and the Director General to determine readily what provisions should be included in observation agreements and how to interpret such provisions.

6. The observation agreement ^{should} ~~is to be~~ concluded as far in advance as circumstances permit, and in no case less than 60 days before the transport of the nuclear explosive device or devices from the territory of the Nuclear Weapon State supplying the service, except for emergency situations in accordance with paragraph 19 of Annex A. The observation agreement described in the Annex will include inter alia:

- a. specific arrangements for observation during the peaceful nuclear explosion project;
- b. the purpose of the project, including a general description thereof;
- c. the location and approximate date of the planned explosion;
- d. the rights and obligations of the IAEA and the Parties in carrying out the observation function.

7. Provisions of this document that are relevant to a particular peaceful nuclear explosion project will become legally binding only upon the entry into force of an observation agreement and to the extent that they are incorporated therein. Such incorporation may also be made by reference.

8. Appropriate provisions of the attached document may also be incorporated in bilateral or multilateral arrangements between Member States and/or non-Member States, including all those provisions that provide for the transfer to the Agency of responsibility for providing observation.

The Agency will not be able to assume such responsibility unless such arrangements are essentially consistent with this document.

in which case the PNE can't be used?

9. It is understood that the guidelines and procedures set forth in this document shall be subject to review and may be modified in the light of experience as peaceful nuclear explosion science, technology and management develop.

10. The Director General accordingly recommends that the Board approve the guidelines set forth in Annex A and that they be circulated for the information of Member States and signatories of the Non-Proliferation Treaty.

Argentina:

"... we would like to suggest that the following paragraph should be included in section 5.4 of Annex II:

'The State supplying a nuclear explosive for peaceful purposes shall make available to the utilising State all information which the latter requires to perform a completely independent analysis of radiological safety, seismological effects and ecological consequences connected with the use of the said explosives.'

In this way, the utilizing State will be in a position satisfactory to discharge, through its specialized institutions, its responsibility to protect the health and safety of its inhabitants.

Secondly, the information required under sections 5.3 and 5.7(c) of Annex II (before and after the explosion) might, we believe, amount to intrusion into a very sensitive area, namely rights associated with commercial property and the protection of confidential information. General lines for Agency action in regard to this problem are, of course laid down in section 5.9 of Annex II, but in our opinion the question of defining the type and scope of information required by the Agency to fulfil the tasks foreseen in General Conference Resolution GC(XLIII)/RES/ might usefully be included in the Appendix, as one of the topics to be dealt with in the future."

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Denmark:

"The Danish Government would like to use this opportunity to state that we consider it to be of utmost importance that peaceful nuclear explosions are not used to undermine the partial test ban treaty. Consequently the IAEA participation in international observation of PNE and in other activities should clearly be limited in such a way that the partial test ban treaty is not jeopardized."

Pakistan:

"The technical service to be made available by the Government(s) supplying the explosive should include detailed feasibility studies, so as to make it unnecessary for NNN states to try to understand nuclear explosive technology for the sake of or under the excuse of PNE."

South Africa:

"It is noted that the report makes no mention of the responsibility for the costs involved in the international observation by the Agency of peaceful nuclear explosions and it is deemed essential that clarity should be obtained as to whether the receiving State or the Agency should bear the expenses."

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Particular importance is attached to the view expressed by the Group that "the Agency's role in health and safety aspects of international PNE operations should be the subject of thorough study by the IAEA" and indeed it is felt that full details of the health and safety precautions to be taken should be provided to the Agency for dissemination to Member States, if so requested. In such an investigation it is felt that particular attention should be paid to the safety of Third Party States and to the possibility of evaluating international safety and controlling it during the execution of a PNE project as part of the international observation programme."

Switzerland:

- It seems to us advisable to specify more plainly what part the national authorities of the country in whose territory the nuclear explosion is to be carried out will play in observation. Switzerland feels that provision should be made to enable representatives of the country concerned to take part in the observation of every PNE project.

- The Swiss Government also feels that some indication should be given as to how the requisite observation might be financed.

Secondly, we should like to add the following points to the topics raised during the discussions of the group of experts (GOV/1433, Annex II):

- The responsibilities devolving upon the Agency, the supplier Government and the Government of the country in whose territory the nuclear explosion is to be carried out, respectively, in relation to any possible damage resulting from the explosion; and legal obligations with regard to protection of the population.
- The same responsibilities and legal obligations in connection with transport of the nuclear device from the supplier country to the country in whose territory the explosion is to be carried out."

GUIDELINES FOR INTERNATIONAL OBSERVATION OF
PEACEFUL NUCLEAR EXPLOSIONS

A. GENERAL PRINCIPLES AND OBJECTIVES

Purpose of observation

1. The basic purpose of observation is to verify that in the course of conducting a Peaceful Nuclear Explosion project in a Non-Nuclear-Weapon State or States, the spirit and letter of Articles I and II of the Non-Proliferation Treaty are not violated^x.

Circumstances requiring observation

2. Observation is required where Peaceful Nuclear Explosion services are carried out under Article V of the Non-Proliferation Treaty and on all other Peaceful Nuclear Explosion projects in which the Agency participates or assists. An observation agreement concluded in accordance with this document is required for the Agency to participate and/or assist in any Peaceful Nuclear Explosion project.

x Article I:

Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.

Article II:

Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear weapons or other nuclear explosive devices.

The Agency's obligations

3. The Agency shall:

(a) arrange to provide the minimum number of observers necessary to maintain surveillance in accordance with the observation agreement over those areas or situations where Articles I or II of the Non-Proliferation Treaty might be contravened;

(b) make public any situations or incidents which contravene or have the appearance of contravening either the intent or the letter of Articles I or II of the Non-Proliferation Treaty, or the obligations of the Parties under the observation agreement required in implementation thereof;

(c) request only that information and carry out only those functions needed to perform its observation functions in accordance with Articles I and II of the Non-Proliferation Treaty, as defined in paragraph

(d) request appropriate action of participating States including, if approved by the Board, withdrawal of the nuclear explosive device or devices from the territory of the Non-Nuclear-Weapon State or States if the ^{such a} ~~reported~~ ^{or incident} situation has not been corrected to the satisfaction of the Director General within a reasonable period of time;

(e) carry out its observation functions in a manner designed to avoid hindering the conduct of the Peaceful Nuclear Explosion operation; to avoid disclosing any confidential or privileged information it might receive and to give due recognition to the provisions of the Non-Proliferation Treaty and existing domestic law of the Governments concerned.

Other parties' obligations

4. It is the responsibility of the Nuclear-Weapon States and Non-Nuclear-Weapon State or States which, in addition to the Agency, are Parties to the observation agreement to:

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- (a) plan and conduct Peaceful Nuclear Explosion projects in a manner to protect against the ^{direct or indirect} disclosure of nuclear explosive design information; including, but not limited to, oral disclosure of such information;
- (b) provide the opportunity for observation in accordance with this document and the observation agreement; and
- (c) cooperate with the Agency in order to enable the Agency observers to perform their functions in accordance with this document and the observation agreement.

5. Where the opportunity for observation is provided in accordance with this document and the observation agreement, the Peaceful Nuclear Explosion project need not be delayed if, through no fault of the Nuclear Weapon State or Non-Nuclear-Weapon State or States party to the observation agreement, the observation function is not performed.

B. PURPOSE AND SCOPE OF OBSERVATION AGREEMENT

6. The observation agreement in general will ^{cover} account for those situations in the conduct of a specific Peaceful Nuclear Explosion project where Articles I or II of the Non-Proliferation Treaty might otherwise be contravened, by delineating those observations necessary to provide assurances:

- (a) that the nuclear explosive device or devices to be used in furnishing Peaceful Nuclear Explosion services to a Non-Nuclear-Weapon State or States remain at all times under the custody and control of the supplier Nuclear Weapon State,
- (b) that there is no opportunity for physical or instrumental or visual access to the internals of the nuclear explosive device or devices or otherwise obtaining design information pertaining thereto by persons other than authorized nationals of the supplying State acting on its behalf, and
- (c) that the nuclear explosion(s) is carried out for the declared

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6. The observation agreement will cover those situations in the conduct of a specific Peaceful Nuclear Explosion project where Articles I or II of the Non-Proliferation Treaty might otherwise be contravened, by specifying those observations necessary to provide assurances:

(a) that any nuclear explosive device to be used in furnishing a Peaceful Nuclear Explosion service to ^A Non-nuclear Weapon State^A or States and any associated documents or material as specified ^{below} in para 7 (d) remain at all times under the custody and control of the supplier Nuclear Weapon State;

(b) that there is no opportunity for persons other than authorised nationals of the supplying State acting on its behalf to obtain design information pertaining to the nuclear explosive device by physical or instrumental or visual access to the interior of any canister holding the nuclear explosive device or to documents or materials as specified ^{below} in para 7 (d);

(c) that no attempt is made to obtain nuclear explosion debris samples if the Nuclear Weapon State has declared that for a specified period of time such material is capable of assisting Non-Nuclear Weapon State in obtaining significant nuclear explosive design information.

7. Observation agreements, in general, shall include, but not be limited to, the inclusion of the following provisions:

(a) appropriate parts of the Non-Proliferation Treaty and this document, either directly or by reference; and an undertaking by the Parties to conduct themselves in accordance with the principles and objectives set forth in this document;

(b) a description of the proposed project including, in general, the declared purpose of the project; the planned involvement of each party in the project; the technology involved; the number of nuclear explosive device cannisters involved, with the approximate explosive yield of each fully assembled cannister; and the planned schedule for detonation;

(c) ~~the following detailed information necessary to~~ ^{for} a detailed description of the required observations ~~as follows:~~

(1) the general characteristics and external dimensions of the shipping container and the fully assembled nuclear explosive device cannister or cannisters to be used in carrying out the Peaceful Nuclear Explosion project;

(2) how the nuclear explosive device cannister or cannisters are to be emplaced, at what depth, and how each emplacement hole is to be filled;

(3) the predicted on-site physical effects such as surface ground motion, chimney or excavation dimensions, and how these effects relate to carrying out the declared purpose of the Peaceful Nuclear Explosion project;

(d) A specific declaration by the supplier Nuclear-Weapon State indicating which of the documents and materials it will utilize in carrying out the Peaceful Nuclear Explosion project require observatic in order to comply with Articles I and II of the Non-Proliferation Treat and a description of the conditions under which Articles I and II no longer apply to such documents and materials.

*action to be taken in
event of malfunction
of nuclear explosive
device and for the equipment
used for its detonation.*

*to be
submitted by
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(c) a description of the procedures agreed to among the Parties for detailed plans required for observation. Such plans may be incorporated in the observation agreement as annexes, and may be altered or extended by agreement among the parties without formal amendment of the observation agreement itself.

8. The detailed plans required for observation shall include:

(a) a schedule for the transportation of the nuclear explosive device or devices in sufficient detail for the observers to perform their assigned functions ~~including methods of transportation, time of departure and arrival, and plans for protective actions;~~

(b) a detailed description of the observation required including contingency plans in the event of unplanned (but reasonably possible) circumstances, names of observers and other responsible representatives of parties to the observation agreement, and a general description of any equipment to be used in maintaining technical surveillance and how this equipment is to be used;

(c) a description of the equipment, if any, to be used by the observers to determine that the nuclear explosive device or devices have been detonated and that the explosion was for the declared purpose of the project. A description of the use of such equipment should also be included.

*action
by whom?
will consider*

*Who is the person(s)
write for the firing
of nuclear explosive
etc*

C. MATERIAL SUBJECT TO PROVISIONS OF ARTICLES I AND II OF THE NON-PROLIFERATION TREATY

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9. Any nuclear explosive device and any documents and materials declared by the supplier Nuclear-Weapon State to contain design information related to a nuclear explosive device to be used in carrying out a Peaceful Nuclear Explosion project in a Non-Nuclear-Weapon State or States is subject to observation under Non-Proliferation Treaty Article V.

10. Any radioactive materials resulting from a Peaceful Nuclear Explosion or explosions within a Non-Nuclear-Weapon State or States and remaining after the detonation, if declared by the supplier Nuclear-Weapon State to be capable of assisting any Non-Nuclear-Weapon State or States in obtaining significant nuclear explosive design information, ^{are} ~~is~~ in accordance with applicable sections of these guidelines, subject to observation under Non-Proliferation Treaty Article V.

~~C. CHARACTER OF OBSERVATION~~ ^{or any components}

11. Observation shall begin when the nuclear explosive device or devices, including any documents and materials declared by the supplier Nuclear-Weapon State to contain design information, leave either the territory or the means of transport which is under the jurisdiction and control of the supplier Nuclear-Weapon State, whichever occurs later. At the request of the supplier Nuclear-Weapon State, observation may begin prior to the transport of the nuclear explosive device or devices from its territory, for the purpose of affixing security seals on tamper-proof containers used for transporting the nuclear explosive device or devices, or to otherwise facilitate the observation function.

12. Observation will continue until the Agency observers have ascertained that the nuclear explosive device or devices have been detonated for the declared purpose and no materials subject to observation remain in the Non-Nuclear-Weapon State or States.

~~D. CHARACTER OF OBSERVATION~~

13. Once observation has been initiated ^{in accordance with the observation} ~~for any material or hardware~~ ^{agreement and this document} ~~designated in accordance with paragraphs 9 and 10~~, surveillance shall be ^{all items subject to observation are} continued on a 24-hour per day basis until the material ~~is~~ either removed from the territory of the Non-Nuclear-Weapon State or States by the Nuclear-Weapon State or, due to the detonation of the nuclear explosive device or devices, it no longer requires surveillance in accordance with the observation agreement and this document.

14. In maintaining such surveillance, continuous visual observation is preferred but technical means of surveillance may be substituted if considered adequate and equivalent to continuous visual observation by the parties to the observation agreement. Substitutions may include:

- (a) observing the surface of the nuclear explosive emplacement areas after the nuclear explosive device or devices have been lowered into the hole and during filling operations;
- (b) the use of tamper-proof containers for the air transport of the nuclear explosive device or devices having proper security seals affixed;
- (c) exterior observation of any facility in which work is being done on the explosive device or devices to assure that only authorized representatives of the supplier Nuclear-Weapon State have access to the internals of the explosive device or devices, and
- (d) ^{appropriate} ~~periodic site~~ inspection to determine whether or not there has been any attempt to obtain nuclear explosion debris samples if a supplier Nuclear-Weapon State has declared, ~~in accordance with paragraph 17 of this document~~, that for a specified period of time such material is capable of assisting a Non-Nuclear-Weapon State or States in obtaining significant nuclear explosive design information.

15. At the time of the detonation and immediately thereafter, [as described in the observation agreement,] the Agency observers shall employ [simple but] adequate methods to ascertain that the nuclear explosive device or devices have been detonated. [For a completely contained underground explosion this requirement might be satisfied by ground motion instruments to determine approximate explosive yield.]

16. During the operations at the nuclear explosion site, Agency observers will determine whether or not the explosion has taken place for the declared purpose. Such observation need not be on a continuous basis unless specifically required by the observation agreement.

D. REPORTING

17. Agency observers individually or collectively shall promptly report to the Director General and to the responsible project representative of the supplier Nuclear-Weapon State concerning any observed circumstances in which it appears that ~~to indicate that the conditions described in paragraph 6 (a) and (c) are not satisfied.~~

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- (1) the nuclear explosive device or devices to be used in furnishing Peaceful Nuclear Explosion services to the Non-Nuclear-Weapon State or States may not have remained under the custody and control of the supplier Nuclear-Weapon State;
 - (2) physical, instrumental or visual access, by persons other than authorized nationals of the supplier Nuclear-Weapon State, to the internals of the nuclear explosive device or devices may have occurred; or
 - (3) nuclear explosive design information or any materials or documents declared by the supplier Nuclear-Weapon State to contain design information may have been obtained by persons other than authorized nationals of the supplier Nuclear-Weapon State.

18. ~~After a peaceful nuclear-detonation-subject-to-observation-has-been carried out, the Director-General shall issue a Record of Observation to the supplier Nuclear-Weapon State and to the Non-Nuclear Weapon State or States in which the project was conducted. Those States shall have 30 days to transmit a report to the Board of Governors. The Board of Governors, in turn, shall submit a report on the matter to all Member States and to non-Member States party to the Non-Proliferation Treaty.~~

When observation of a peaceful nuclear detonation has been conducted to the satisfaction of the Director General, he
After a peaceful nuclear-detonation-subject-to-observation-has-been carried out, the Director-General shall issue a Record of Observation to the supplier Nuclear-Weapon State and to the Non-Nuclear Weapon State or States in which the project was conducted. Those States shall have 30 days ^{thereafter} to transmit a report to the Board of Governors. The Board of Governors, in turn, shall submit a report on the matter to all Member States and to non-Member States party to the Non-Proliferation Treaty.

E. EMERGENCY PROJECTS

19. In emergency situations, such as oil or gas leakages, where the prompt use of a Peaceful Nuclear Explosion or explosions would alleviate the situation, special measures may be taken consistent with the principles

embodied in this document and international observation under the Non-Proliferation Treaty. In no case, however, will such measures be implemented in the absence of specific approval by the Board of Governors.

F. ^(c) DESIGNATION OF AGENCY OBSERVERS

20. When it is proposed to designate an Agency observer for a Peaceful Nuclear Explosion project, the Director General shall inform the supplier Nuclear-Weapon State and the Non-Nuclear-Weapon State or States in which the project is to be conducted in writing of the name and nationality of the proposed Agency observer and shall transmit a written certification of the observer's relevant qualifications and shall enter into such other consultations as the interested states request. The supplier Nuclear-Weapon State and the Non-Nuclear-Weapon State or States in which the project is to be conducted shall inform the Director General within 30 days of receipt of such a proposal whether they would accept the designation of that Agency observer. If so accepted, the proposed observer may be designated as an Agency observer for that project, and the Director General shall notify the interested States of such designation.

21. If a State party to an observation agreement, either upon proposal of a designation or at any time after a designation has been made, objects to the designation of an Agency observer for the Peaceful Nuclear Explosion project involved it shall inform the Director General of its objection. In this event, the Director General shall propose to the Interested States an alternative designation or designations. The Director General may refer to the Board, for its appropriate action, the repeated refusal of a party to an observation agreement to accept the designation of an Agency observer if, in his opinion, this refusal would impede the observation provided for in the relevant observation agreement.

22. The Nuclear-Weapon State or Non-Nuclear Weapon State or States involved in a Peaceful Nuclear Explosion project shall as speedily as possible grant or renew appropriate visas where required for persons accepted by such States as designated Agency observers.

4.
B. VISITS OF AGENCY OBSERVERS

23. The States parties to an observation agreement shall except in emergency situations be given at least three weeks' notice of the arrival of the Agency's observers, including their names and the place and approximate time of their arrival and departure.

24. Agency observers may be accompanied by representatives of the States concerned, provided that the observers shall not thereby be delayed or otherwise impeded in the exercise of their functions. Agency observers shall use such points of entry into and departure from the State, and such routes and modes of travel within it, as may be designated by the State.

25. Agency observers, in locations where this is necessary, shall be provided, on request and for reasonable compensation if agreed on, with appropriate equipment for carrying out observation and with suitable accommodation and transport.

26. The visits and activities of the Agency's observers shall be so arranged as to ensure on the one hand the effective discharge of their functions and on the other hand the minimum possible inconvenience to the States concerned.

27. Consultations shall take place with the States concerned to ensure that, consistent with the effective discharge of the functions of the Agency's observers, their activities will be conducted in harmony with the terms of the Non-Proliferation Treaty, with the laws and regulations existing in the State.

28. After submitting proper identification, Agency observers in accordance with the observation agreement shall have access to the containers or hardware containing those materials or hardware the supplier Nuclear-Weapon State has, in accordance with paragraphs 16 and 17, declared to require observation under Non-Proliferation Treaty Article V. Such access by Agency observers shall be limited to that which is necessary to assure that persons other than authorized nationals of the supplier Nuclear-Weapon State do not have any form of access to the internals of such containers, hardware and other items that require observation.

29. Agency observers shall have access to any location within the area designated as the Peaceful Nuclear Explosion project site in the observation agreement, except such locations, if any, as cannot consistent with Articles I and II of the Non-Proliferation Treaty, be open to others than authorized nationals of the supplier Nuclear-Weapon State.

30. Agency observers shall be granted the privileges and immunities necessary for the performance of their functions. Suitable provisions shall be included in each observation agreement, insofar as relevant to the execution of that agreement, of the provisions of the Agreement on the Privileges and Immunities of the International Atomic Energy Agency, excepting Articles V and XII thereof, provided that all parties to the agreement so agree.

31. Disputes between a State concerned and the Agency arising out of the exercise of the functions of Agency observers will be settled according to an appropriate disputes clause in the observation agreement.