

# **Treaty Between The United States of America and The Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests (and Protocol Thereto) (TTBT)**

Signed at Moscow July 3, 1974

Entered into force December 11, 1990

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## **Narrative**

The Treaty on the Limitation of Underground Nuclear Weapon Tests, also known as the Threshold Test Ban Treaty (TTBT), was signed in July 1974. It establishes a nuclear "threshold," by prohibiting tests having a yield exceeding 150 kilotons (equivalent to 150,000 tons of TNT). The threshold is militarily important since it removes the possibility of testing new or existing nuclear weapons going beyond the fractional-megaton range. In the 1960s, many tests above 150 kilotons were conducted by both countries. The mutual restraint imposed by the Treaty reduced the explosive force of new nuclear warheads and bombs which could otherwise be tested for weapons systems. Of particular significance was the relationship between explosive power of reliable, tested warheads and first-strike capability.

The task of negotiating a comprehensive test ban remained on the agenda of the U.S. Government, and, in Article I, the parties to the Threshold Test Ban Treaty undertook an obligation to continue negotiations toward that goal.

The first proposal for stopping nuclear weapon tests was made in 1955, and the first major negotiations with the Soviet Union for an effectively controlled test ban began in Geneva in 1958, with the United Kingdom also participating. The Conference on the Discontinuance of Nuclear Weapon Tests produced no agreement. The problem of working out verification procedures to ensure compliance with a complete ban on nuclear weapon tests in all environments proved to be intractable at that time. The procedures deemed necessary by the United States and the United Kingdom were not acceptable to the Soviet Union.

In 1963 the Limited Test Ban Treaty (LTBT) was signed by the Soviet Union, the United States, and the United Kingdom. This Treaty prohibits nuclear weapon testing in the atmosphere, in outer space and under water. The parties also agreed not to carry out any nuclear weapon test, or any other nuclear explosion, in any other environment -- i.e., underground -- that would cause radioactive debris to be present beyond the borders of the country in which the explosion took place.

Underground nuclear explosions were not prohibited by the 1963 Treaty, although both in the Treaty preamble and Article I, the LTBT parties pledged to seek "the discontinuance of all test explosions of nuclear weapons for all time...."

The United States and Soviet Union agreed in the spring of 1974 to pursue the possibilities of further restrictions on nuclear testing. Accordingly, a team of U.S. experts was sent to Moscow for technical talks.

Agreement on the Threshold Test Ban Treaty was reached during the summit meeting in Moscow in July 1974. The Treaty included a protocol which detailed technical data to be exchanged and which limited weapon testing to specific designated test sites to assist verification. The data to be exchanged included information on the geographical boundaries and geology of the testing areas. Geological data -- including such factors as density of rock formation, water saturation, and depth of the water table -- are useful in verifying test yields because the seismic signal produced by a given underground nuclear explosion varies with these factors at the test location. After an actual

test has taken place, the geographic coordinates of the test location are to be furnished to the other party, to help in placing the test in the proper geological setting and thus in assessing the yield. The Treaty also stipulates that data will be exchanged on a certain number of tests for calibration purposes. By establishing the correlation between stated yields of explosions at the specified sites and the seismic signals produced, this exchange improved assessments by both parties of the yields of explosions based primarily on the measurements derived from their seismic instruments. The tests used for calibration purposes may be tests conducted in the past or new tests.

Agreement to exchange the detailed data described above represented a significant degree of direct cooperation by the two major nuclear powers in the effort to control nuclear weapons. For the first time, each party agreed to make available to the other data relating to its nuclear weapons test program.

The technical problems associated with a yield threshold were recognized by the sides in the spring of 1974. In this context the Soviet Union mentioned the idea of some kind of a "mistakes" understanding concerning occasional, minor, unintended breaches. Discussions on the subject of such an understanding took place in the autumn of 1974 and in the spring of 1976. The Soviet Union was informed by the United States that the understanding reached would be included as part of the public record associated with submitting the Treaty to the Senate for advice and consent to ratification. The entire understanding is as follows:

Both Parties will make every effort to comply fully with all the provisions of the TTB Treaty. However, there are technical uncertainties associated with predicting the precise yields of nuclear weapons tests. These uncertainties may result in slight, unintended breaches of the 150 kiloton threshold. Therefore, the two sides have discussed this problem and agreed that: (1) one or two slight, unintended breaches per year would not be considered a violation of the Treaty; (2) such breaches would be a cause for concern, however, and, at the request of either Party, would be the subject for consultations.

The Soviet Union was also informed that while the United States would not consider such a slight, unintentional breach a violation, the United States would carefully review each such breach to ensure that it is not part of a general attempt to exceed the confines of the Treaty.

The understanding in its entirety was included in the transmittal documents which accompanied the TTB Treaty and the PNE Treaty when they were submitted to the Senate for advice and consent to ratification on July 29, 1976.

Although the TTBT was signed in 1974, it was not sent to the U.S. Senate for advice and consent to ratification until July 1976. Submission was held in abeyance until the companion Treaty on underground nuclear explosions for peaceful purposes (PNET) had been successfully negotiated in accordance with Article III of the TTBT.

For many years, neither the United States nor the Soviet Union ratified the TTBT or the PNE Treaty. However, in 1976 each party separately announced its intention to observe the Treaty limit of 150 kilotons, pending ratification.

The United States and the Soviet Union began negotiations in November 1987 to reach agreement on additional verification provisions that would make it possible for the United States to ratify the treaties. Agreement on additional verification provisions, contained in new protocols, substituting for the original protocols, was reached in June 1990. The TTBT and PNET entered into force on December 11, 1990. The TTBT verification protocol provides for the use of the hydrodynamic yield measurement method with respect to all tests having a planned yield exceeding 50 kilotons, as well as seismic monitoring and, with respect to all tests having a planned yield exceeding 35 kilotons, on-site inspection.

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## **Treaty Text**

# **Treaty Between The United States of America and The Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests**

*Signed at Moscow July 3, 1974*

*Ratified December 8, 1990*

*Entered into force December 11, 1990*

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to take effective measures toward reductions in strategic arms, nuclear disarmament, and general and complete disarmament under strict and effective international control,

Recalling the determination expressed by the Parties to the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water in its Preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time, and to continue negotiations to this end,

Noting that the adoption of measures for the further limitation of underground nuclear weapon tests would contribute to the achievement of these objectives and would meet the interests of strengthening peace and the further relaxation of international tension,

Reaffirming their adherence to the objectives and principles of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water and of the Treaty on the Non-Proliferation of Nuclear Weapons,

Have agreed as follows:

### **Article I**

1. Each Party undertakes to prohibit, to prevent, and not to carry out any underground nuclear weapon test having a yield exceeding 150 kilotons at any place under its jurisdiction or control, beginning March 31, 1976.
2. Each Party shall limit the number of its underground nuclear weapon tests to a minimum.
3. The Parties shall continue their negotiations with a view toward achieving a solution to the problem of the cessation of all underground nuclear weapon tests.

### **Article II**

1. For the purpose of providing assurance of compliance with the provisions of this Treaty, each Party shall use national technical means of verification at its disposal in a manner consistent with the generally recognized principles of international law.
2. Each Party undertakes not to interfere with the national technical means of verification of the other Party operating in accordance with paragraph 1 of this Article.
3. To promote the objectives and implementation of the provisions of this Treaty the Parties shall, as necessary, consult with each other, make inquiries and furnish information in response to such inquiries.

### **Article III**

The provisions of this Treaty do not extend to underground nuclear explosions carried out by the Parties for peaceful purposes. Underground nuclear explosions for peaceful purposes shall be governed by an agreement which is to be negotiated and concluded by the Parties at the earliest possible time.

## **Article IV**

This Treaty shall be subject to ratification in accordance with the constitutional procedures of each Party. This Treaty shall enter into force on the day of the exchange of instruments of ratification.

## **Article V**

1. This Treaty shall remain in force for a period of five years. Unless replaced earlier by an agreement in implementation of the objectives specified in paragraph 3 of Article I of this Treaty, it shall be extended for successive five-year periods unless either Party notifies the other of its termination no later than six months prior to the expiration of the Treaty. Before the expiration of this period the Parties may, as necessary, hold consultations to consider the situation relevant to the substance of this Treaty and to introduce possible amendments to the text of the Treaty.

2. Each Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests. It shall give notice of its decision to the other Party six months prior to withdrawal from this Treaty. Such notice shall include a statement of the extraordinary events the notifying Party regards as having jeopardized its supreme interests.

3. This Treaty shall be registered pursuant to Article 102 of the Charter of the United Nations. DONE at Moscow on July 3, 1974, in duplicate, in the English and Russian languages, both texts being equally authentic.

### **FOR THE UNITED STATES OF AMERICA:**

RICHARD NIXON

*The President of the United States of America*

### **FOR THE UNION OF SOVIET SOCIALIST REPUBLICS:**

L. BREZHNEV

*General Secretary of the Central Committee of the CPSU*

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Protocol to the Treaty Between The United States of America and The Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests

The United States of America and the Union of Soviet Socialist Republics, hereinafter referred to as the Parties,

Confirming the provisions of the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests of July 3, 1974, hereinafter referred to as the Treaty,

Convinced of the necessity to ensure effective verification of compliance with the Treaty,  
Have agreed as follows:

### **SECTION I. DEFINITIONS**

For the purposes of this Protocol:

1. The term "test site" means a geographical area for the conduct of underground nuclear weapon tests, specified in paragraph 1 or in accordance with paragraph 2 of Section II of this Protocol.
2. The term "underground nuclear weapon test," hereinafter "test," means either a single underground nuclear explosion conducted at a test site, or two or more underground nuclear explosions conducted at a test site within an area delineated by a circle having a diameter of two kilometers and conducted within a total period of time of 0.1 second. The yield of a test shall be the aggregate yield of all explosions in the test.
3. The term "explosion" means the release of nuclear energy from an explosive canister.
4. The term "explosive canister" means, with respect to every explosion, the container or covering for one or more nuclear explosives.
5. The term "Testing Party" means the Party conducting a test.

6. The term "Verifying Party" means the Party entitled to carry out, in accordance with this Protocol, activities related to verification of compliance with the Treaty by the Testing Party.
7. The term "Designated Personnel" means personnel appointed by the Verifying Party from among its nationals and included on its list of Designated Personnel, in accordance with Section IX of this Protocol, to carry out activities related to verification in accordance with this Protocol in the territory of the Testing Party.
8. The term "Transport Personnel" means personnel appointed by the Verifying Party from among its nationals and included on its list of Transport Personnel, in accordance with Section IX of this Protocol, to provide transportation for Designated Personnel, their baggage, and equipment of the Verifying Party between the territory of the Verifying Party and the point of entry in the territory of the Testing Party.
9. The term "point of entry" means Washington, D.C. (Dulles International Airport), for Designated Personnel and Transport Personnel, and Travis Air Force Base, California, for Designated Personnel and Transport Personnel and for equipment specified in Section VIII of this Protocol, with respect to the United States of America; and Moscow (Sheremetyevo-2 International Airport) for Designated Personnel and Transport Personnel and for equipment specified in Section VIII of this Protocol, and Leningrad (Pulkovo-2 International Airport) for Designated Personnel and Transport Personnel, with respect to the Union of Soviet Socialist Republics. Other locations may serve as points of entry for specific tests, as agreed by the Parties.
10. The term "hydrodynamic yield measurement method" means the method whereby the yield of a test is derived from on-site, direct measurement of the properties of the shock wave as a function of time during the hydrodynamic phase of the ground motion produced by the test.
11. The term "seismic yield measurement method" means the method whereby the yield of a test is derived from measurement of parameters of elastic ground motion produced by the test.
12. The term "on-site inspection" means activities carried out by the Verifying Party at the test site of the Testing Party, in accordance with Section VII of this Protocol, for the purposes of independently obtaining data on conditions under which the test will be conducted and for confirming the validity of data provided by the Testing Party.
13. The term "emplacement hole" means any drill-hole, shaft, adit or tunnel in which one or more explosive canisters, associated cables, and other equipment are installed for the purposes of conducting a test.
14. The term "end of the emplacement hole" means the reference point established by the Testing Party beyond the planned location of each explosive canister along the axis of the emplacement hole.
15. The term "satellite hole" means any drill-hole, shaft, adit or tunnel in which sensing elements and cables and transducers are installed by the Verifying Party for the purposes of hydrodynamic measurement of the yield of a specific test.
16. The term "standard configuration" means either the standard vertical configuration or the standard horizontal configuration of a test described in paragraph 2 or 3 of Section V of this Protocol.
17. The term "non-standard configuration" means a configuration of a test different from that described in paragraph 2 or 3 of Section V of this Protocol.
18. The term "hydrodynamic measurement zone" means a region, the dimensions of which are specified in paragraph 1 of Section V of this Protocol, within which hydrodynamic yield measurements are carried out.
19. The term "reference test" means a test, identified by the Testing Party as a reference test, that meets the requirements of paragraph 8 of Section V of this Protocol.
20. The term "emplacement point" means the point in the emplacement hole that coincides with the center point of an emplaced explosive canister.
21. The term "choke section" means a barrier designed to restrict the flow of energy from an explosive canister.



22. The term "area of a pipe" or "area of a cableway" means the area of the external cross section of that pipe or cableway measured in a plane perpendicular to the axis of that pipe or cableway at the point within the zone specified in paragraph 2(c), 3(e), or 3(f) of Section V of this Protocol where its cross section is largest.
23. The term "sensing elements and cables" means switches, cables, and cable segments that provide direct measurement of the position of a shock front as a function of time, and are installed in a satellite hole by the Verifying Party for the purposes of use of the hydrodynamic yield measurement method.
24. The term "transducer" means a device that converts physical properties of a shock wave, such as stress and particle velocity, into a recordable signal, and is installed in a satellite hole by the Verifying Party, with associated power supplies, for the purposes of use of the hydrodynamic yield measurement method, with respect to explosions having a planned yield exceeding 50 kilotons and characteristics differing from those set forth in paragraph 2 or 3 of Section V of this Protocol.
25. The term "core sample" means an intact cylindrical sample of geologic material having dimensions no less than two centimeters in diameter and two centimeters in length.
26. The term "rock fragment" means a sample of geologic material having an irregular shape and a volume no less than 10 cubic centimeters.
27. The term "geodetic measurements" means the determination of the geometric position of points within tunnels or cavities.
28. The term "Designated Seismic Station" means any one of the seismic stations designated by each Party, in accordance with Section VI of this Protocol, at which activities related to verification are carried out in accordance with this Protocol.
29. The term "Bilateral Consultative Commission" means the Commission established in accordance with Section XI of this Protocol.
30. The term "Coordinating Group" means a working group of the Bilateral Consultative Commission that is established for each test with respect to which activities related to verification are carried out.
31. The term "coordinated schedule" means the schedule, including the specific times and durations for carrying out activities related to verification for a specific test, established in the Coordinating Group as specified in paragraph 12 of Section XI of this Protocol.
32. The term "Nuclear Risk Reduction Centers" means the Centers located in Washington, D.C., and Moscow, established in accordance with the Agreement Between the United States of America and the Union of Soviet Socialist Republics on the Establishment of Nuclear Risk Reduction Centers of September 15, 1987.

## **SECTION II. TEST SITES**

1. The test sites for the Parties are: the Nevada Test Site, for the United States of America; and the Northern Test Site (Novaya Zemlya) and the Semipalatinsk Test Site, for the Union of Soviet Socialist Republics. Upon entry into force of the Treaty, each Party, for each of its test sites, shall provide the other Party with:
- (a) a precise written description of the boundaries; and (b) a diagram with geographic coordinates of the boundaries to the nearest second, to a scale no smaller than 1:250,000.
2. Following entry into force of the Treaty, if a Party decides to establish a new test site or to change the boundaries of a test site specified in paragraph 1 of this Section, the description and diagram specified in paragraph 1 of this Section shall be transmitted to the other Party no less than 12 months prior to the planned date for conducting the first test at the new test site or area of expansion of a previously specified test site.
3. A test site of a Party shall be located only within its territory. All tests shall be conducted solely within test sites specified in paragraph 1 or in accordance with paragraph 2 of this Section.
4. For the purposes of the Treaty and this Protocol, all underground nuclear explosions at test sites specified in paragraph 1 or in accordance with paragraph 2 of this Section shall be considered underground nuclear weapon tests and shall be subject to all provisions of the Treaty and this Protocol.

### SECTION III. VERIFICATION MEASURES

1. For purposes of verification of compliance with the Treaty, in addition to using available national technical means, the Verifying Party shall have the right, with respect to tests that are conducted 200 days or more following entry into force of the Treaty:

(a) with respect to a test having a planned yield exceeding 50 kilotons, to carry out any or all of the verification activities associated with use of the hydrodynamic yield measurement method, in accordance with Section V of this Protocol, with respect to each explosion in the test; (b) with respect to a test having a planned yield exceeding 50 kilotons, to carry out any or all of the verification activities associated with use of the seismic yield measurement method, in accordance with Section VI of this Protocol; and (c) with respect to a test having a planned yield exceeding 35 kilotons, to carry out any or all of the verification activities associated with on-site inspection, in accordance with Section VII of this Protocol, with respect to each explosion in the test, except that such activities may be carried out with respect to a test having a planned yield exceeding 50 kilotons only if the Verifying Party does not use the hydrodynamic yield measurement method.

2. In addition to the rights specified in paragraph 1 of this Section, for the purposes of building confidence in the implementation of this Protocol and improving its national technical means of verification, the Verifying Party shall have the right:

(a) if, in each of the five calendar years immediately following entry into force of the Treaty, the Testing Party does not conduct at least two tests having a planned yield exceeding 50 kilotons, to use the hydrodynamic yield measurement method, in accordance with Section V of this Protocol, with respect to two tests from among those having the highest planned yields that the Testing Party conducts in that calendar year; (b) if, in the sixth calendar year following entry into force of the Treaty and in each calendar year thereafter, unless the Parties otherwise agree, the Testing Party does not conduct at least one test having a planned yield exceeding 50 kilotons, to use the hydrodynamic yield measurement method, in accordance with Section V of this Protocol, with respect to one test from among those having the highest planned yield that the Testing Party conducts in that calendar year; (c) if, in any calendar year, the Testing Party postpones a test having a planned yield of 50 kilotons or less to the following calendar year, after having been notified by the Verifying Party of its intent to use the hydrodynamic yield measurement method with respect to that test, to use such method with respect to that test in the following calendar year. This right shall be additional to the rights specified in paragraph 1(a) of this Section and in subparagraphs (a) and (b) of this paragraph; and (d) in addition to the rights specified in subparagraphs (a), (b), and (c) of this paragraph, if, in each of the five calendar years beginning with the conduct of the first test by the Testing Party at a new test site, the Testing Party does not conduct at least two tests having a planned yield exceeding 50 kilotons at the new test site, the Verifying Party shall have the right to use the hydrodynamic yield measurement method, in accordance with Section V of this Protocol, with respect to two tests from among those having the highest planned yields that the Testing Party conducts at the new test site in that calendar year.

3. If the Verifying Party has notified the Testing Party that it intends to use the hydrodynamic yield measurement method with respect to a specific test including more than one explosion, unless the Parties agree on verification measures with respect to such a test:

(a) the distance between the closest points of any two adjacent explosive canisters shall be no less than 50 meters; and (b) the time of each explosion shall be established by the Testing Party so as to permit the carrying out of hydrodynamic yield measurements for each explosion for a distance of no less than 30 meters in the satellite hole closest to the emplacement hole with which it is associated.

4. If the Verifying Party has notified the Testing Party that it intends to use the hydrodynamic yield measurement method with respect to a specific test, and if that test is conducted in more than one emplacement hole, the Testing Party shall have the right to conduct that test only if no more than one emplacement hole has characteristics or contains explosive canisters having characteristics differing from those set forth in paragraph 2 or 3 of Section V of this Protocol with respect to a test of standard configuration, unless the Parties agree on verification measures with respect to such a test.

5. The Testing Party shall have the right to conduct a test having a planned yield exceeding 35 kilotons within a time period of less than two seconds of any other test having a planned yield exceeding 35 kilotons only if the Parties agree on verification measures with respect to such tests. No test shall be conducted within 15 minutes prior to or following a reference test, unless the Parties otherwise agree.

6. The Testing Party shall have the right to conduct a test having a planned yield exceeding 35 kilotons in a cavity having a volume exceeding 20,000 cubic meters only if the Parties agree on verification measures with respect to such a test.

7. The Verifying Party, by notifying the Testing Party that it intends to use the hydrodynamic yield measurement method with respect to a test of non-standard configuration having a planned yield exceeding 50 kilotons, shall have the right to require a reference test for this non-standard test, in order to compare the yields measured through its national technical means for these two associated tests with the yield obtained by carrying out hydrodynamic yield measurement of the reference test. The right of the Verifying Party to a reference test shall be independent of whether or not it actually carries out hydrodynamic yield measurements of the test of non-standard configuration.

8. With respect to the requirement for a reference test:

(a) if the Testing Party, at the time it provides notification of a test, identifies that test as a reference test for a future test of non-standard configuration, and if the Verifying Party does not use the hydrodynamic yield measurement method with respect to the identified reference test, the Verifying Party shall forfeit its right to require a reference test for that test of non-standard configuration and for any subsequent test of non-standard configuration that would be associated with that reference test, if the Testing Party conducts the identified reference test; (b) the Testing Party shall have the right to identify only one test of standard configuration as a reference test not associated with any specific test of non-standard configuration until it has conducted an associated test of non-standard configuration for which this test serves as a reference test, or unless it simultaneously provides notification of the associated test of non-standard configuration; and (c) if the Testing Party, at the time it provides notification of a test of standard configuration, indicates that the test will satisfy a requirement for a reference test for a previously conducted test of non-standard configuration, and if the Verifying Party notifies the Testing Party of its intent not to use the hydrodynamic yield measurement method with respect to that reference test, the Verifying Party shall forfeit its right to require a reference test for the previously conducted test of non-standard configuration. In that case, the Testing Party shall have the right to cancel that reference test.

9. Following notification by the Verifying Party, in accordance with paragraph 5 of Section IV of this Protocol, of whether or not it intends to carry out any of the activities related to verification for a specific test, and, if so, which activities, the Verifying Party shall forfeit its right to revise that notification unless the Testing Party changes the previously declared location of that test by more than one minute of latitude or longitude or changes the planned yield of a test from 50 kilotons or less to a planned yield exceeding 50 kilotons. If the Testing Party makes any such change, the Verifying Party shall have the right to revise its previous notification and to carry out any of the activities specified in paragraph 1 or 2 of this Section and, if the Verifying Party notifies the Testing Party that it intends to carry out activities related to verification with respect to that test, in accordance with paragraph 20 of Section IV of this Protocol, the Testing Party shall not conduct the test less than 180 days following the date of the revised notification by the Verifying Party, unless the Parties otherwise agree.

10. Designated Personnel shall have the right to carry out activities related to verification in accordance with this Protocol, 24 hours a day, provided such activities are consistent with the safety requirements of the Testing Party at the test site or Designated Seismic Station. All operations and procedures that require the participation of Designated Personnel and personnel of the Testing Party shall be carried out in accordance with the technical operations and practices at the test site or Designated Seismic Station of the Testing Party, and in this connection:

(a) Designated Personnel:



- (i) shall not interfere with activities of personnel of the Testing Party at the test site or Designated Seismic Station; and
- (ii) shall be responsible for the working of their equipment, its timely installation and operation, participation in such operations, including dry runs, as the Testing Party may request, and recording of data; and

(b) the Testing Party:

- (i) shall be under no obligation to delay the test because of any malfunction of the equipment of the Verifying Party or inability of Designated Personnel to carry out their functions, unless the Testing Party caused such a situation to arise; and
- (ii) shall bear full responsibility for the preparation and conduct of the test and shall have exclusive control over it.

11. If the Verifying Party has notified the Testing Party that it intends to carry out activities related to verification for a specific test, the Testing Party shall have the right to make changes in the timing of its operations related to the conduct of that test, except that the Testing Party shall not make changes in the timing of its operations related to the conduct of that test that would preclude Designated Personnel from carrying out their rights related to verification provided in this Protocol. If the Testing Party notifies the Verifying Party of a change in the timing of its operations that the Verifying Party deems would either preclude or significantly limit the exercise of such rights, the Coordinating Group shall meet at the request of the Representative of the Verifying Party to the Coordinating Group, to consider the change in order to ensure that the rights of the Verifying Party are preserved. If the Coordinating Group cannot agree on a revision to the coordinated schedule that will ensure the rights of both Parties as provided in this Protocol, there shall be no advancement of events within the coordinated schedule due to such a change. Either Party may request that the Bilateral Consultative Commission consider any such change in timing of operations or in the coordinated schedule, in accordance with paragraph 15 of Section XI of this Protocol.

#### **SECTION IV. NOTIFICATIONS AND INFORMATION RELATING TO TESTS**

1. Unless otherwise provided in this Protocol, all notifications required by this Protocol shall be transmitted through the Nuclear Risk Reduction Centers. The Nuclear Risk Reduction Centers may also be used, as appropriate, to transmit other information provided in accordance with this Protocol.

2. Not later than the June 1 immediately following entry into force of the Treaty, and not later than June 1 of each year thereafter, each Party shall provide the other Party with the following information on tests that it intends to conduct in the following calendar year:

- (a) the projected number of tests having a planned yield exceeding 35 kilotons;
- (b) the projected number of tests having a planned yield exceeding 50 kilotons; and
- (c) if the number of tests declared in accordance with subparagraphs (a) and (b) of this paragraph is less than the number of tests for which rights are specified in paragraph 2 of Section III of this Protocol, whether it intends to conduct a sufficient number of other tests to permit the Verifying Party to exercise fully the rights specified in paragraph 2 of Section III of this Protocol.

3. On the date of entry into force of the Treaty each Party shall provide the other Party with the information specified in paragraphs 2(a) and 2(b) of this Section for the remainder of the calendar year in which the Treaty enters into force, and, if the Treaty enters into force after June 1, information specified in paragraph 2 of this Section for the following calendar year.

4. No less than 200 days prior to the planned date of any test with respect to which the Verifying Party has the right to carry out any activity related to verification in accordance with this Protocol, the Testing Party shall provide the Verifying Party with the following information to the extent and degree of accuracy available at that time:

- (a) the planned date of the test and its designation;
- (b) the planned date of the beginning of emplacement of explosive canisters;

- (c) the location of the test, expressed in geographic coordinates to the nearest minute;
- (d) whether the planned yield of the test exceeds 35 kilotons;
- (e) whether the planned yield of the test exceeds 50 kilotons;
- (f) if the planned yield is 50 kilotons or less, whether the test is one of the tests with respect to which the Verifying Party has the right to use the hydrodynamic yield measurement method, in accordance with paragraph 2 of Section III of this Protocol;
- (g) the planned depth of each emplacement hole to the nearest 10 meters;
- (h) the type or types of rock in which the test will be conducted, including the depth of the water table;
- (i) whether the test will be of standard or non-standard configuration; and
- (j) whether the test will serve as a reference test for:
  - (i) a previously conducted test of non-standard configuration with which such a reference test is associated;
  - (ii) a future test of non-standard configuration for which notification has been provided or is being simultaneously provided in accordance with paragraph 8(b) of Section III of this Protocol; or
  - (iii) a future test of non-standard configuration for which the Testing Party has not yet provided notification.

5. Within 20 days following receipt of information specified in paragraph 4 of this Section, the Verifying Party shall inform the Testing Party, in a single notification, whether or not it intends to carry out, with respect to this test, any activities related to verification that it has a right to carry out, in accordance with Section III of this Protocol, and, if so, whether it intends:

- (a) to use the hydrodynamic yield measurement method, in accordance with Section V of this Protocol;
- (b) to use the seismic yield measurement method, in accordance with Section VI of this Protocol; and
- (c) to carry out on-site inspection, in accordance with Section VII of this Protocol.

6. Within 30 days following notification by the Verifying Party, in accordance with paragraph 11 of Section XI of this Protocol, that it requires a reference test for a test of non-standard configuration, the Testing Party shall notify the Verifying Party whether it will meet the requirement for a reference test through:

- (a) the identification of a previously conducted reference test;
- (b) the identification of a previously conducted test of standard configuration, meeting the requirements for a reference test, with respect to which the Verifying Party carried out hydrodynamic yield measurements;
- (c) the identification of a previously notified test of standard configuration, meeting the requirements for a reference test, with respect to which the Verifying Party has notified the Testing Party of its intent to carry out hydrodynamic yield measurements; or
- (d) the conduct of a reference test within 12 months of the non-standard test, whose identification as a reference test will be made in the notification, in accordance with paragraph 4(j) of this Section.

7. If the Verifying Party notifies the Testing Party that it intends to use the hydrodynamic yield measurement method, the Testing Party shall provide the Verifying Party, no less than 120 days prior to the planned date of the test, with the following information:

- (a) a description of the geological and geophysical characteristics of the test location, which shall include: the depth of the water table; the stratigraphic column, including the lithologic description of each formation; the estimated physical parameters of the rock, including bulk density, grain density, compressional velocity, porosity, and total water content; and information on any known geophysical discontinuities in the media within each hydrodynamic measurement zone;
- (b) the planned cross-sectional dimensions of each emplacement hole in each hydrodynamic measurement zone;

- (c) the location and configuration of any known voids larger than one cubic meter within each hydrodynamic measurement zone;
- (d) a description of materials, including their densities, to be used to stem each emplacement hole within each hydrodynamic measurement zone;
- (e) whether it is planned that each emplacement hole will be fully or partially cased, and, if so, a description of materials of this casing;
- (f) whether it is planned that each satellite hole will be fully or partially cased, and, if so, a description of materials of this casing;
- (g) a topographic map to a scale no smaller than 1:25,000 and a contour interval of 10 meters or less showing:

- (i) an area with a radius of no less than two kilometers centered on the entrance to each emplacement hole, that shall include the area delineated by a circle having a radius of 300 meters centered directly above the planned emplacement point of each explosive canister; and
- (ii) a one-kilometer wide corridor centered on the planned location of the above-ground cables of the Verifying Party;

(h) overall drawings showing the external dimensions of each explosive canister and each choke section, and any pipes or cableways passing through a choke section, as well as any other pipes and cableways connected to that explosive canister and located within five meters of that explosive canister;

- (i) the specific locations, referenced to the entrance to each vertical satellite hole or to the surface location of the entrance to each horizontal emplacement hole, at which individual gas-blocking devices shall be installed if such devices are used on the electrical cables specified in paragraphs 3(a) and 3(b) of Section VIII of this Protocol; and

- (j) whether the Testing Party will provide satellite communications as specified in paragraph 13 of Section X of this Protocol for use by Designated Personnel.

8. If the Verifying Party notifies the Testing Party that it intends to use the seismic yield measurement method, the Testing Party shall provide the Verifying Party, no less than 120 days prior to the planned date of the test, with the information specified in paragraphs 9(a), 9(b), and 9(c) of this Section.

9. If the Verifying Party notifies the Testing Party that it intends to carry out on-site inspection, the Testing Party shall provide the Verifying Party, no less than 120 days prior to the planned date of the test, with the following information:

(a) a description of the geological and geophysical characteristics of the test location, which shall include: the depth of the water table; the stratigraphic column, including the lithologic description of each formation; the estimated physical parameters of the rock, including bulk density, grain density, compressional velocity, porosity, and total water content; and information on any known geophysical discontinuities in the media within a radius of 300 meters of the planned emplacement point of each explosive canister;

(b) the planned cross-sectional dimensions of each emplacement hole in the portion within 300 meters of the planned emplacement point of each explosive canister;

(c) the location and configuration of any known voids larger than 1000 cubic meters within a radius of 300 meters of the planned emplacement point of each explosive canister;

(d) whether it is planned that each emplacement hole will be fully or partially cased, and, if so, a description of materials of this casing;

(e) a topographic map to a scale no smaller than 1:25,000 and a contour interval of 10 meters or less showing an area with a radius of no less than two kilometers centered on the entrance to each emplacement hole, that shall include the area delineated by a circle having a radius of 300 meters centered directly above the planned emplacement point of each explosive canister; and

(f) whether the Testing Party will provide satellite communications as specified in paragraph 13 of Section X of this Protocol for use by Designated Personnel.

10. The Testing Party shall immediately notify the Verifying Party of any change in any information provided in accordance with paragraph 2, 3, 4(a), 4(c), 4(d), 4(e), 4(f) or 4(j) of this Section, and:

(a) if the Verifying Party has notified the Testing Party that it intends to carry out activities related to verification in accordance with Section V of this Protocol, of any change in any information provided in accordance with paragraph 4(b), 4(g), 4(h), 4(i), 6 or 7 of this Section, or paragraph 10 of Section XI of this Protocol;

(b) if the Verifying Party has notified the Testing Party that it intends to carry out activities related to verification in accordance with Section VI of this Protocol, of any change in any information provided in accordance with paragraph 4(g), 4(h) or 8 of this Section; and

(c) if the Verifying Party has notified the Testing Party that it intends to carry out activities related to verification in accordance with Section VII of this Protocol, of any change in any information provided in accordance with paragraph 4(b), 4(g), 4(h) or 9 of this Section, or paragraph 10(a) of Section XI of this Protocol.

11. If the Testing Party makes changes in the information specified in paragraph 4(a), 10(a), 10(b) or 10(c) of this Section related to a specific test for which Designated Personnel are present in the territory of the Testing Party, it shall also immediately notify, in writing, the Designated Personnel Team Leader carrying out activities related to verification of that test at the test site and at each Designated Seismic Station of such changes.

12. The Testing Party shall immediately inform the Verifying Party of any change in the timing of its operations related to the conduct of a specific test that affects the coordinated schedule, and if Designated Personnel are present in the territory of the Testing Party, it shall also immediately notify, in writing, the Designated Personnel Team Leader carrying out activities related to verification of that test at the test site and at each Designated Seismic Station.

13. If, in carrying out activities related to verification of a specific test, Designated Personnel are present at the test site or any Designated Seismic Station:

(a) no less than 48 hours prior to the initial planned time of the test, the Testing Party shall notify each Designated Personnel Team Leader, in writing, of the time for beginning the period of readiness for the test and the planned time of the test, to the nearest second. This and all subsequent notifications shall be referenced to Universal Time Coordinated and to local time at the test site or the Designated Seismic Station;

(b) except as otherwise provided in this Section, if the Testing Party changes the planned time of the test, it shall immediately notify each Designated Personnel Team Leader, in writing, of the new planned time of the test;

(c) the Testing Party shall conduct the test only within a period of readiness;

(d) unless the Parties otherwise agree, the period of readiness shall begin:

(i) no less than six days following completion of stemming of the hydrodynamic measurement zone of all satellite holes, if verification activities in accordance with Section V of this Protocol are carried out; and

(ii) no more than five days prior to the planned date of the test, if verification activities in accordance with Section VI of this Protocol are carried out;

(e) the Testing Party may terminate the period of readiness at any time. The Testing Party shall then immediately notify each Designated Personnel Team Leader, in writing, that the period of readiness has been terminated; and

(f) if the Testing Party terminates the period of readiness or changes the time for beginning the period of readiness, it shall provide notice of the time for beginning a new period of readiness to each Designated Personnel Team Leader, in writing, no less than 12 hours prior to beginning this new period of readiness.



14. Following notification in accordance with paragraph 13(a) or 13(b) of this Section, the Testing Party, without further notification, may advance the time of the test by no more than five minutes.

15. After the event readiness signal specified in paragraph 10(b) of Section V of this Protocol has been started:

(a) if the Testing Party delays the test and terminates the event readiness signal at least one second prior to the planned time of the test, it may carry out the test, without further notification, at any time within no more than 60 minutes after the planned time of the test, provided it generates a new event readiness signal; and

(b) if the Testing Party subsequently delays the test without ending the event readiness signal at least one second prior to the planned time of the test, the Testing Party shall end the event readiness signal and shall not begin a new event readiness signal within 20 minutes following that planned time of the test. The Testing Party shall notify each Designated Personnel Team Leader, in writing, of the new planned time of the test, at least 10 minutes prior to the beginning of the new event readiness signal for that test.

16. Following notification in accordance with paragraph 13(a) or 13(b) of this Section, if the test is delayed by more than 60 minutes the Testing Party shall notify each Designated Personnel Team Leader, in writing, of the new planned time of the test no less than 30 minutes prior to the new planned time of the test.

17. During the period of readiness, if a test is delayed by more than three hours from the last notification of the planned time of the test, the Testing Party shall notify each Designated Personnel Team Leader, in writing, of the period during which the test will not be conducted.

18. No less than one hour following the test, the Testing Party shall notify each Designated Personnel Team Leader, in writing, of the actual time of the test to the nearest 0.1 second.

19. For each test for which notification has been provided in accordance with paragraph 4 of this Section, no less than 48 hours prior to the initial planned time of the test, the Testing Party shall notify the Verifying Party of the planned time of the test to the nearest one second. If the Testing Party subsequently delays the planned time of the test by more than 24 hours, it shall immediately notify the Verifying Party of the new planned time of the test to the nearest one second. No less than three days following the test, the Testing Party shall notify the Verifying Party of the actual time of the test, referenced to Universal Time Coordinated, to the nearest 0.1 second.

20. The Testing Party shall immediately notify the Verifying Party of a change in the location of a test by more than one minute of latitude or longitude or of a change in the planned yield of a test from 50 kilotons or less to a planned yield exceeding 50 kilotons. The Verifying Party shall notify the Testing Party, within 20 days following receipt of notification of such a change in the location or planned yield of the test, whether it intends to carry out for this test any activities related to verification in accordance with paragraph 9 of Section III of this Protocol. If the Verifying Party, in this revised notification, notifies the Testing Party that it intends to carry out any of the activities related to verification that it has a right to carry out in accordance with Section III of this Protocol, the Testing Party shall provide the Verifying Party with the information that it is required to provide in accordance with paragraphs 7, 8, and 9 of this Section and paragraph 10 of Section XI of this Protocol.

21. If the Verifying Party has notified the Testing Party that it intends to use the hydrodynamic yield measurement method, the beginning of emplacement of sensing elements and cables shall not occur less than 90 days after notification of any change in the location of the test by more than one minute of latitude or longitude, unless the Parties otherwise agree.

22. If the Verifying Party has notified the Testing Party that it does not intend to carry out hydrodynamic yield measurements for a specific test, the Testing Party shall have the right to change the configuration of that test from standard to non-standard or vice versa, without notifying the Verifying Party of such change.

23. If the Verifying Party has notified the Testing Party that it intends to carry out hydrodynamic yield measurements for a specific test, the Testing Party shall immediately notify the Verifying Party of a change in the configuration of that test from standard to non-standard, or vice versa, or of



any increase in the number of emplacement holes or explosive canisters of the test. The Verifying Party shall, within five days of notification of any such change, notify the Testing Party whether it will revise its initial notification and whether it deems that this change would either preclude or significantly limit the exercise of its rights provided in this Protocol. If so, the Coordinating Group shall immediately meet to consider a revision in the coordinated schedule that will ensure the rights of both Parties provided in this Protocol. If the Parties cannot agree on a revised coordinated schedule within 15 days following notification by the Testing Party of such a change, the date of notification of the change shall be deemed the initial notification of a test in accordance with paragraph 4 of this Section, and the test shall be conducted no less than 180 days following the date of notification of the change.

24. If the Verifying Party has notified the Testing Party that it intends to carry out on-site inspection with respect to a specific test, and if the Testing Party notifies the Verifying Party of an increase in the number of explosive canisters or an increase in the number of emplacement holes, the Verifying Party shall, within five days of notification of any such change, notify the Testing Party whether it deems that this change would significantly limit the exercise of its rights provided in this Protocol. If so, the Coordinating Group shall immediately meet to consider a revision in the coordinated schedule that will ensure the rights of both Parties provided in this Protocol. If the Parties cannot agree on a revised coordinated schedule within 15 days following notification by the Verifying Party that it deems that, as a result of such an increase, its rights would be significantly limited, the date of that notification shall be deemed notification by the Verifying Party that it intends to carry out on-site inspection in accordance with paragraph 5 of this Section, and the test shall be conducted no less than 165 days following the date of such notification.

25. The Verifying Party may at any time, but no later than one year following the test, request from the Testing Party clarification of any point of information provided in accordance with this Section. Such clarification shall be provided in the shortest possible time, but no later than 30 days following receipt of the request.

## **SECTION V. HYDRODYNAMIC YIELD MEASUREMENT METHOD**

1. The hydrodynamic measurement zone is:

(a) with respect to a test of standard configuration, described in paragraph 2 or 3 of this Section, as well as with respect to any explosion having a planned yield of 50 kilotons or less:

- (i) if an emplacement hole is vertical, the cylindrical region 25 meters in diameter whose axis is midway between the axes of the emplacement hole and the satellite hole, extending from a point 30 meters below the end of the emplacement hole to a point 100 meters from the end of the emplacement hole in the direction of the entrance to the emplacement hole; or
- (ii) if an emplacement hole is horizontal, the cylindrical region 25 meters in diameter whose axis is midway between the axes of the emplacement hole and the satellite hole, extending from a point 15 meters beyond the end of the emplacement hole to a point 65 meters from the end of the emplacement hole in the direction of the entrance to the emplacement hole; and

(b) with respect to a test of non-standard configuration having a planned yield exceeding 50 kilotons:

- (i) if an emplacement hole is vertical, the cylindrical region 200 meters in diameter coaxial with the emplacement hole, extending from a point 30 meters below the end of the emplacement hole to a point 100 meters from the center point of the explosive canister in the direction of the entrance to the emplacement hole; or
- (ii) if an emplacement hole is horizontal, the cylindrical region 130 meters in diameter whose axis is coaxial with the emplacement hole, extending from a point 15 meters beyond the end of the emplacement hole to a point

65 meters from the center point of the explosive canister in the direction of the entrance to the emplacement hole.

2. For the purposes of the use of the hydrodynamic yield measurement method, a test shall be deemed of standard vertical configuration if:

(a) each emplacement hole is vertical and cylindrical, and is drilled or excavated with a diameter no greater than four meters;

(b) the bottom of each emplacement hole is filled with stemming material having a bulk density no less than 60 percent of the average density of the surrounding rock, to form a plug no less than three meters thick, and the top of this plug of stemming material is the end of the emplacement hole for the explosive canister emplaced farthest from the entrance to the emplacement hole;

(c) any pipe or cableway connected to an explosive canister passes through a choke section. This choke section is installed on the top of the explosive canister and has the following characteristics:

(i) the diameter of the choke section is no less than that of the explosive canister;

(ii) the choke section is no less than one meter thick;

(iii) the sum of the areas of all pipes and cableways within the choke section does not exceed 0.5 square meters;

(iv) the area of each pipe or cableway within the choke section does not exceed 0.3 square meters;

(v) the part of the choke section in contact with the explosive canister consists of a steel plate having a thickness no less than 0.005 meters; and

(vi) the choke section, except for pipes and cableways, is filled, prior to emplacement, with stemming material having a bulk density no less than 60 percent of the average density of the surrounding rock, and has a product of density and thickness no less than 250 grams per square centimeter;

(d) the length of each explosive canister does not exceed 12 meters and, after an explosive canister is emplaced, the lowest part of the choke section is no more than 12 meters above the end of the emplacement hole;

(e) the diameter of each explosive canister does not exceed three meters;

(f) each emplacement hole has been drilled or excavated with a diameter, within each hydrodynamic measurement zone, no more than one meter greater than the diameter of each explosive canister; or, if an emplacement hole has been cased, the inside diameter of the casing, within each hydrodynamic measurement zone, is no more than one meter greater than the diameter of each explosive canister. Within the 15-meter segment above the end of each emplacement hole for each explosive canister, no washouts penetrate more than one meter into the wall of the emplacement hole;

(g) all voids in or connected to an emplacement hole, within each hydrodynamic measurement zone, external to:

(i) any explosive canister;

(ii) any choke sections;

(iii) any diagnostic canisters; and

(iv) associated cables and pipes

are filled with stemming material having a bulk density no less than 60 percent of the average density of the surrounding rock;

(h) within each hydrodynamic measurement zone, all voids greater than 10 cubic meters, external and unconnected to an emplacement hole or a satellite hole, and all voids greater than one cubic meter, within two meters of the wall of a satellite hole or any part of an explosive canister, are filled with stemming material having a bulk density no less than 70 percent of the average density of the surrounding rock; and

(i) within each hydrodynamic measurement zone, the distance between a satellite hole and any other drilled hole or excavation is no less than the distance between that satellite hole and the emplacement hole with which it is associated.

3. For the purposes of the use of the hydrodynamic yield measurement method, a test shall be deemed of standard horizontal configuration if:

(a) each emplacement hole is horizontal, with an excavated cross section, measured in the plane perpendicular to its axis, no greater than five meters by five meters for the first 65 meters from the end of the emplacement hole for each explosive canister, except that any diagnostic canister associated with it shall occupy, in an emplacement hole, space having a cross section no greater than 3.5 meters by 3.5 meters for the first 50 meters of the emplacement hole from the choke section of each explosive canister in the direction of the entrance to the emplacement hole;

(b) the end of each emplacement hole is either:

(i) unsupported native rock, the surface of which is essentially perpendicular to the axis of the emplacement hole; or

(ii) the surface of a plug no less than three meters thick, formed of stemming material having a bulk density no less than 60 percent of the average density of the surrounding rock;

(c) the length of each explosive canister does not exceed 12 meters and, after it is emplaced, the end of the explosive canister farthest from the entrance to the emplacement hole is no less than one meter and no more than two meters from the end of the emplacement hole;

(d) the cross section of each explosive canister measured in the plane perpendicular to the axis of the emplacement hole does not exceed three meters by three meters;

(e) any pipe or cableway connected to an explosive canister and lying entirely within the emplacement hole passes through a choke section. This choke section is installed at the end of the explosive canister nearest to the entrance of the emplacement hole and has the following characteristics:

(i) the dimensions of the choke section perpendicular to the axis of the emplacement hole are no less than those of the explosive canister;

(ii) the choke section is no less than one meter thick;

(iii) the sum of the areas of all pipes and cableways within the choke section, plus the sum of the areas of pipes and cableways specified in subparagraph (f) of this paragraph, does not exceed 0.5 square meters;

(iv) the area of each pipe or cableway within the choke section does not exceed 0.3 square meters; and

(v) the choke section, except for pipes and cableways meeting the requirements of subparagraphs (e)(iii) and (e)(iv) of this paragraph, is filled with stemming material having a bulk density no less than 60 percent of the average density of the surrounding rock, and has a product of density and thickness no less than 250 grams per square centimeter;

(f) any pipe or cableway connected to any surface of an explosive canister and not lying entirely within the emplacement hole has the following characteristics:

(i) the area of each pipe or cableway within five meters of the explosive canister does not exceed 0.05 square meters; and

(ii) the sum of the areas of all such pipes and cableways within five meters of the explosive canister does not exceed 0.1 square meters;

(g) any diagnostic canister connected to the pipes or cableways specified in subparagraph (f) of this paragraph lies entirely outside the hydrodynamic measurement zone;

(h) all voids in or connected to an emplacement hole, including any bypass or access tunnels within the hydrodynamic measurement zone, external to:

(i) any explosive canister;

(ii) any choke sections;

(iii) any diagnostic canisters; and

(iv) associated cables and pipes

are filled with stemming material having a bulk density no less than 60 percent of the average density of the surrounding rock;

(i) within each hydrodynamic measurement zone, all voids greater than 10 cubic meters, external and unconnected to an emplacement hole or a satellite hole, and all voids greater than one cubic meter, within two meters of the wall of a satellite hole or any part of an explosive canister, are filled with stemming material having a bulk density no less than 70 percent of the average density of the surrounding rock; and

(j) within the portion of each hydrodynamic measurement zone extending from the end of the emplacement hole in the direction of the entrance to the emplacement hole, the distance between a satellite hole and any other tunnel or excavation is no less than the distance between that satellite hole and the emplacement hole with which it is associated.

4. With respect to a test of standard configuration, as well as with respect to any explosion having a planned yield of 50 kilotons or less:

(a) personnel of the Testing Party, using their own equipment, shall drill or excavate a satellite hole associated with each emplacement hole, at a time of their own choosing. The Testing Party shall have the right to complete drilling or excavation of a satellite hole for a specific test prior to the arrival of Designated Personnel at the test site to carry out activities related to use of the hydrodynamic yield measurement method for that test. Each satellite hole shall meet the following requirements:

(i) if an emplacement hole is vertical, the axis of the associated satellite hole shall be located 11 meters, plus or minus three meters, from the axis of the emplacement hole within each hydrodynamic measurement zone. If an emplacement hole is horizontal, the axis of the associated satellite hole shall be located 11 meters, plus or minus two meters, from the axis of the emplacement hole within each hydrodynamic measurement zone, and it may be drilled or excavated either as a single continuous hole or in separate consecutive segments associated with each hydrodynamic measurement zone. The axis of any satellite hole shall be no less than six meters from the wall of any drilled or excavated cavity or hole;

(ii) its end shall be no less than 30 meters below the level of the end of the associated vertical emplacement hole farthest from the entrance to the emplacement hole, or no less than 15 meters beyond the point at which the satellite hole is closest to the end of the associated horizontal emplacement hole farthest from the entrance to the emplacement hole;

(iii) if it is prepared by drilling, it shall be drilled no less than 0.3 meters and no more than 0.5 meters in diameter. Within each hydrodynamic measurement zone, no washouts shall penetrate more than one meter into the wall of the hole; and

(iv) if it is prepared by excavation, it shall have an excavated cross section, measured in the plane perpendicular to its axis, no greater than 2.5 meters by 2.5 meters within each hydrodynamic measurement zone;

(b) Designated Personnel shall have the right to observe the activities of the personnel of the Testing Party carried out to meet the specifications set forth in paragraph 2(b) of this Section and, if applicable, set forth in paragraph 3(b)(ii) of this Section. A representative sample of no less than 1000 cubic centimeters in volume of the stemming material used to form the plugs specified in paragraphs 2(b) and 3(b)(ii) of this Section shall be provided to Designated Personnel for retention;

(c) Designated Personnel shall have the right to carry out, under observation of personnel of the Testing Party and with their assistance, if such assistance is requested by Designated Personnel, directional surveys and geodetic measurements of each

satellite hole and emplacement hole prior to the planned date of the beginning of emplacement of sensing elements and cables;

(d) equipment specified in paragraph 3 of Section VIII of this Protocol shall be operated by Designated Personnel and shall be installed, in accordance with installation instructions provided in accordance with paragraph 6(c) of Section VIII of this Protocol, by Designated Personnel under observation of personnel of the Testing Party and with their assistance, if such assistance is requested by Designated Personnel. The location of each hydrodynamic recording facility and the command and monitoring facility of the Verifying Party and the instrumentation facility of the Testing Party specified in paragraph 10(l) of this Section shall be determined by the Testing Party in consultation with the Verifying Party in the Coordinating Group no less than 90 days prior to the beginning of emplacement of sensing elements and cables. Areas for the installation of these facilities, cable supports, and cableways for protection of cables of the Verifying Party, specified in paragraphs 3(b), 3(f), and 3(g) of Section VIII of this Protocol, shall be prepared by the Testing Party in accordance with requirements agreed upon in the Coordinating Group. Only cables of the Verifying Party shall be installed in these cableways. Designated Personnel shall have access, under observation of personnel of the Testing Party, to the cables specified in paragraphs 3(f) and 3(g) of Section VIII of this Protocol and to the cableways in which they are installed, at all times. Personnel of the Testing Party shall have access to these cableways only under observation of Designated Personnel;

(e) Designated Personnel shall have the right to use their own primary electrical power sources to supply electrical power to hydrodynamic equipment specified in paragraph 3 of Section VIII of this Protocol. At the request of the Verifying Party, the Testing Party shall supply electrical power from the standard electrical network of its test site through converters provided by the Verifying Party or, by agreement of the Parties, by the Testing Party;

(f) for each test, the only equipment installed in a satellite hole shall be that of the Verifying Party specified in paragraphs 3(a) and 3(h) of Section VIII of this Protocol. If an emplacement hole is vertical, the end point of the equipment farthest from the entrance to the satellite hole shall be installed no less than 30 meters below the level of the end of the emplacement hole farthest from the entrance to the emplacement hole. If an emplacement hole is horizontal, the end point of this equipment shall be installed no less than 15 meters beyond the point at which a satellite hole is closest to the end of the emplacement hole farthest from the entrance to the emplacement hole. For each satellite hole, Designated Personnel shall have the right to install no more than six sensing elements and cables, without regard to the number of switches. Personnel of each Party shall have the right to measure the location of the installed sensing elements and cables;

(g) Designated Personnel shall have the right to conduct a final directional survey and geodetic measurements of each satellite hole upon completion of installation of sensing elements and cables;

(h) personnel of the Testing Party, under observation of Designated Personnel, shall fill all voids in or connected to each satellite hole within each hydrodynamic measurement zone with a stemming material agreed upon by the Parties, having a bulk density no less than 70 percent of the average density of the surrounding rock. A representative sample of no less than 1000 cubic centimeters in volume of each stemming material used in each hydrodynamic measurement zone shall be provided to Designated Personnel for retention. The methods and materials used for stemming satellite holes and any hydrodynamic measurement equipment emplacement pipe shall:

- (i) be consistent with the containment practices of the Testing Party;
- (ii) be chosen to minimize voids around sensing elements and cables; and
- (iii) be chosen to avoid damage to the sensing elements and cables;



(i) Designated Personnel shall have the right to observe the stemming of the hydrodynamic measurement zones of each emplacement hole in accordance with paragraphs 2(g) and 3(h) of this Section. A representative sample of no less than 1000 cubic centimeters in volume of each stemming material used in each hydrodynamic measurement zone shall be provided to Designated Personnel for retention;

(j) the Testing Party shall have the right to case or line each emplacement hole; and

(k) the Testing Party shall have the right to case or line each satellite hole, provided that:

(i) sensing elements and cables can be installed as specified in subparagraph (f) of this paragraph;

(ii) casing or lining material in each hydrodynamic measurement zone is agreed upon by the Parties; and

(iii) casing or lining in each hydrodynamic measurement zone is affixed to the surrounding formation with material agreed upon by the Parties.

5. In preparation for the use of the hydrodynamic yield measurement method with respect to a test of standard configuration, as well as with respect to any explosion having a planned yield of 50 kilotons or less:

(a) upon their arrival at the test site, no less than 10 days prior to the planned date of the beginning of emplacement of sensing elements and cables, Designated Personnel shall provide the Testing Party with a description of the recording format and the computer program, to enable the Testing Party to read digital data if digital recordings of hydrodynamic data will be made by Designated Personnel;

(b) the Testing Party shall provide Designated Personnel upon their arrival at the test site with the results of any studies of core samples and rock fragments extracted from each emplacement hole and satellite hole and any exploratory holes and tunnels, and the results of logging and geodetic measurements carried out in each emplacement hole, each satellite hole, and any exploratory holes and tunnels, relevant to the geology and geophysics of each hydrodynamic measurement zone, if the Testing Party carried out such studies and measurements;

(c) using their own equipment and under observation of personnel of the Testing Party, Designated Personnel shall have the right to carry out:

(i) if an emplacement hole is vertical, in the emplacement hole and associated satellite hole, caliper logs, directional surveys, geodetic measurements, and depth or distance measurements to determine the dimensions and the relative locations of the emplacement hole and satellite hole, as well as measurements to determine the location and volume of all voids within each hydrodynamic measurement zone, using, in a non-destructive way, such methods as electromagnetic measurements, radar, and acoustic sounding;

(ii) if an emplacement hole is vertical, within the hydrodynamic measurement zones of either the emplacement hole or, at the option of the Testing Party, of the satellite hole, gamma-gamma, gamma, neutron, electrical resistivity, magnetic susceptibility, gravity, acoustic, and television logging;

(iii) if an emplacement hole is horizontal, in the emplacement hole and associated satellite hole, as well as in the drilled holes specified in subparagraph (e)(ii) of this paragraph, caliper logs, directional surveys, geodetic measurements, and distance measurements to determine the dimensions and relative location of these holes, as well as measurements to determine the location and volume of all voids within each hydrodynamic measurement zone using, in a non-destructive way, such methods as electromagnetic measurements, radar, and acoustic sounding; and

(iv) if an emplacement hole is horizontal, in the drilled holes specified in subparagraph (e)(ii) of this paragraph, and within the hydrodynamic measurement zones of the emplacement hole, or, at the option of the Testing Party, of the satellite hole, gamma-gamma, gamma, neutron, electrical resistivity, magnetic susceptibility, gravity, and acoustic logging;

(d) all logging data and geometrical measurements obtained by Designated Personnel, in accordance with subparagraph (c) of this paragraph, including calibration data, shall be duplicated, and a copy of the data shall be provided to personnel of the Testing Party prior to departure from the test site of Designated Personnel who have carried out these measurements. Calibration data shall include information necessary to confirm the sensitivity of logging equipment under the conditions in which it is used;

(e) Designated Personnel shall have the right to receive:

(i) if an emplacement hole is vertical, core samples or, at the option of Designated Personnel, rock fragments from the emplacement hole or, at the option of the Testing Party, from the satellite hole, extracted at no more than 10 depths within each hydrodynamic measurement zone, specified by Designated Personnel. The total volume of core samples or rock fragments extracted at each depth shall be no less than 400 cubic centimeters and no more than 3000 cubic centimeters, unless the Parties otherwise agree; and

(ii) if an emplacement hole is horizontal, core samples or, at the option of Designated Personnel, rock fragments from the emplacement hole or, at the option of the Testing Party, the satellite hole within each hydrodynamic measurement zone. If core samples are extracted from the emplacement hole or, at the option of the Testing Party, from an excavated satellite hole, they shall be extracted during drilling from each of no more than 10 holes drilled at stations specified by Designated Personnel. The diameter of each drilled hole shall be no less than 0.09 meters and no more than 0.15 meters, and the depth of each hole shall be no more than the diameter of the emplacement hole or satellite hole at this station. Core samples shall be extracted at locations specified by Designated Personnel along each drilled hole. If core samples are extracted from a drilled satellite hole, they shall be extracted by personnel of the Testing Party during the drilling of the satellite hole, within each hydrodynamic measurement zone, at no more than 10 stations specified by Designated Personnel and under their observation. Rock fragments shall be extracted from the emplacement hole or an excavated satellite hole at each of no more than 10 stations specified by Designated Personnel. Core samples and rock fragments may be taken from no more than a total of 10 stations. If an emplacement hole or an excavated satellite hole is lined at any station specified by Designated Personnel for extracting core samples or rock fragments, personnel of the Testing Party shall enable Designated Personnel to extract core samples or rock fragments at such a station from native rock. The total volume of core samples or rock fragments extracted at each station shall be no less than 400 cubic centimeters and no more than 3000 cubic centimeters, unless the Parties otherwise agree;

(f) core samples or rock fragments may be extracted in accordance with subparagraph (e) of this paragraph by personnel of the Testing Party, under observation of Designated Personnel, or by Designated Personnel, at the option of the Testing Party;

(g) if personnel of the Testing Party do not extract core samples or rock fragments in accordance with subparagraph (e) of this paragraph, Designated Personnel shall have the right, using their own equipment, to extract such core samples or rock fragments in

accordance with subparagraph (e) of this paragraph, under observation of personnel of the Testing Party;

(h) if an emplacement hole is vertical, and if the Testing Party, prior to arrival of Designated Personnel at the test site:

(i) has cased a total of 20 meters or more of the emplacement hole or the satellite hole within any hydrodynamic measurement zone, Designated Personnel shall have the right to carry out, in the uncased hole, the activities specified in subparagraph (c)(ii) of this paragraph and to receive core samples or rock fragments from the uncased hole, extracted in accordance with subparagraphs (e), (f), and (g) of this paragraph; or

(ii) has cased a total of 20 meters or more of both the emplacement hole and the satellite hole within any hydrodynamic measurement zone, the Testing Party shall provide an uncased hole with respect to which Designated Personnel shall have the same rights as those specified for the emplacement hole and the satellite hole in subparagraphs (c), (e), (f), and (g) of this paragraph. The axis of this uncased hole shall be within 22 meters of the axes of the emplacement hole and the satellite hole within each hydrodynamic measurement zone. If personnel of the Testing Party, under observation of Designated Personnel, extract core samples through coring during the drilling of this uncased hole, the diameter of the hole shall be no less than 0.09 meters. If Designated Personnel, under observation of personnel of the Testing Party, extract core samples from this uncased hole following drilling, the diameter of the uncased hole shall be no less than 0.3 meters;

(i) Designated Personnel shall have the right to retain core samples and rock fragments specified in subparagraphs (e), (f), (g), and (h) of this paragraph. Any such core samples or rock fragments shall be prepared in accordance with procedures agreed upon by the Parties for shipment to the territory of the Verifying Party; and

(j) logging, directional surveys, geodetic measurements, and extracting of core samples or rock fragments carried out in accordance with subparagraphs (c), (e), (f), (g), (h), and (i) of this paragraph shall begin at times chosen by the Testing Party and specified in the coordinated schedule. Designated Personnel shall have the right, within a period not to exceed 21 days, to carry out logging, directional surveys, geodetic measurements, and coring activities, unless the Parties otherwise agree and so specify in the coordinated schedule. The Testing Party shall not emplace any explosive until the activities specified in this paragraph have been completed.

6. With respect to any explosion having a planned yield exceeding 50 kilotons and characteristics differing from those set forth in paragraph 2 or 3 of this Section with respect to a test of standard configuration:

(a) personnel of the Testing Party, using their own equipment and at a time of their own choosing, shall drill or excavate up to three satellite holes associated with the emplacement hole. The location of the satellite holes shall be determined in accordance with paragraph 11(b)(i) of Section XI of this Protocol. The Testing Party shall have the right to complete drilling or excavation of satellite holes for the specific test prior to the arrival of Designated Personnel at the test site for that test. The satellite holes shall meet the following requirements:

(i) with respect to the first satellite hole, its length shall be as specified in paragraph 4(a)(ii) of this Section;

(ii) with respect to the second and third satellite holes, if such are required by the Verifying Party, the axis of each satellite hole shall be within three meters of the axis specified by the Verifying Party. Its length shall be specified by the Verifying Party and in no case shall it extend beyond the hydrodynamic measurement zone associated with that explosion;

(iii) within each hydrodynamic measurement zone, the axis of each satellite hole shall be essentially parallel to the axis of the emplacement hole, if the emplacement hole is vertical, or shall be essentially straight, if the emplacement hole is horizontal. Within each hydrodynamic measurement zone, its axis shall be no less than eight meters from the axis of the emplacement hole, if the emplacement hole is vertical, or no less than 10 meters from the axis of the emplacement hole, if the emplacement hole is horizontal, and no less than six meters from the wall of any drilled or excavated cavity or hole;

(iv) with respect to a drilled satellite hole, it shall be drilled no less than 0.3 meters and no more than 0.5 meters in diameter, unless the Parties otherwise agree. Within each hydrodynamic measurement zone, no washouts shall penetrate more than one meter into the wall of the hole;

(v) with respect to an excavated satellite hole, it shall have a cross section, measured in the plane perpendicular to its axis, no greater than 2.5 meters by 2.5 meters within each hydrodynamic measurement zone; and

(vi) within each hydrodynamic measurement zone, except for any drilled or excavated cavity or hole, all voids, external and unconnected to any satellite hole, greater than 10 cubic meters in volume, within six meters of the axis of any satellite hole, and all voids greater than one cubic meter in volume, within two meters of the axis of any satellite hole, shall be filled with stemming material having a bulk density no less than 70 percent of the average density of the surrounding rock;

(b) Designated Personnel shall have the right to carry out, under observation of personnel of the Testing Party and with their assistance, if such assistance is requested by Designated Personnel, directional surveys and geodetic measurements of each satellite hole and emplacement hole prior to the beginning of emplacement of sensing elements and cables and transducers;

(c) equipment specified in paragraph 3 of Section VIII of this Protocol shall be operated by Designated Personnel and shall be installed, in accordance with installation instructions provided in accordance with paragraph 6(c) of Section VIII of this Protocol, by Designated Personnel under observation of personnel of the Testing Party and with their assistance, if such assistance is requested by Designated Personnel. The location of each hydrodynamic recording facility and the command and monitoring facility of the Verifying Party and the instrumentation facility of the Testing Party specified in paragraph 10(l) of this Section shall be determined by the Testing Party in consultation with the Verifying Party in the Coordinating Group no less than 90 days prior to the beginning of emplacement of sensing elements and cables. Areas for the installation of these facilities, cable supports, and cableways for protection of cables of the Verifying Party specified in paragraphs 3(b), 3(f), and 3(g) of Section VIII of this Protocol shall be prepared by the Testing Party in accordance with requirements agreed upon in the Coordinating Group. Only cables of the Verifying Party shall be installed in these cableways. Designated Personnel shall have access, under observation of personnel of the Testing Party, to the cables specified in paragraphs 3(f) and 3(g) of Section VIII of this Protocol and to the cableways in which they are installed, at all times. Personnel of the Testing Party shall have access to these cableways only under observation of Designated Personnel;

(d) Designated Personnel shall have the right to use their own primary electrical power sources to supply electrical power to hydrodynamic equipment specified in paragraph 3 of Section VIII of this Protocol. At the request of the Verifying Party, the Testing Party shall supply electrical power from the standard electrical network of its test site through converters provided by the Verifying Party or, upon agreement of the Parties, by the Testing Party;

(e) for each test, the only equipment installed in each satellite hole shall be that of the Verifying Party specified in paragraphs 3(a) and 3(h) of Section VIII of this Protocol. This equipment shall be installed in each satellite hole at the locations specified by Designated Personnel. Designated Personnel shall have the right to install in each satellite hole no more than six sensing elements and cables, without regard to the number of switches, and no more than six transducers together with no more than 14 cables for information transmission and power supply. The total number of cables in each satellite hole shall not exceed 20. Personnel of each Party shall have the right to measure the location of the installed sensing elements and cables and transducers;

(f) Designated Personnel shall have the right to conduct a final directional survey and geodetic measurements of each satellite hole upon completion of installation of sensing elements and cables and transducers;

(g) personnel of the Testing Party, under observation of Designated Personnel, shall fill all voids in or connected to each satellite hole within each hydrodynamic measurement zone with a stemming material agreed upon by the Parties, having a bulk density no less than 70 percent of the average density of the surrounding rock. A representative sample of no less than 1000 cubic centimeters in volume of each stemming material used in each hydrodynamic measurement zone shall be provided to Designated Personnel for retention. The methods and materials used for stemming satellite holes and any hydrodynamic measurement equipment emplacement pipe shall:

(i) be consistent with the containment practices of the Testing Party;

(ii) be chosen to minimize voids around sensing elements and cables and transducers; and

(iii) be chosen to avoid damage to the sensing elements and cables and transducers;

(h) Designated Personnel shall have the right to observe the stemming of the hydrodynamic measurement zones of each emplacement hole in accordance with paragraph 9(d) of this Section. A representative sample of no less than 1000 cubic centimeters in volume of each stemming material used in each hydrodynamic measurement zone shall be provided to Designated Personnel for retention;

(i) the Testing Party shall have the right to case or line each emplacement hole; and

(j) the Testing Party shall have the right to case or line each satellite hole, provided that:

(i) sensing elements and cables and transducers can be installed as specified in subparagraph (e) of this paragraph;

(ii) casing or lining material in each hydrodynamic measurement zone is agreed upon by the Parties; and

(iii) casing or lining in each hydrodynamic measurement zone is affixed to the surrounding formation with material agreed upon by the Parties.

7. In preparation for the use of the hydrodynamic yield measurement method with respect to any explosion having a planned yield exceeding 50 kilotons and characteristics differing from those set forth in paragraph 2 or 3 of this Section with respect to a test of standard configuration:

(a) upon their arrival at the test site, no less than 10 days prior to the planned date of the beginning of emplacement of sensing elements and cables and transducers, Designated Personnel shall provide the Testing Party with a description of the recording format and the computer program, to enable the Testing Party to read digital data if digital recordings of hydrodynamic data will be made by Designated Personnel;

(b) the Testing Party shall provide Designated Personnel upon their arrival at the test site with the results of any studies of core samples and rock fragments extracted from each emplacement hole and satellite hole and any exploratory holes and tunnels, and the results of logging and geodetic measurements carried out in each emplacement hole, each satellite hole, and any exploratory holes and tunnels, relevant to the geology and



geophysics of each hydrodynamic measurement zone, if the Testing Party carried out such studies and measurements;

(c) using their own equipment and under observation of personnel of the Testing Party, Designated Personnel shall have the right to carry out:

(i) if an emplacement hole is vertical, in the emplacement hole and each associated satellite hole, caliper logs, directional surveys, geodetic measurements, and depth or distance measurements to determine the dimensions and the relative locations of the emplacement hole and each satellite hole, as well as measurements to determine the location and volume of all voids within each hydrodynamic measurement zone, using, in a non-destructive way, such methods as electromagnetic measurements, radar, and acoustic sounding;

(ii) if an emplacement hole is vertical, within the hydrodynamic measurement zones of the emplacement hole and each associated satellite hole, gamma-gamma, gamma, neutron, electrical resistivity, magnetic susceptibility, gravity, acoustic, and television logging;

(iii) if an emplacement hole is horizontal, in the emplacement hole and each associated satellite hole, as well as in the drilled holes specified in subparagraph (e)(ii) of this paragraph, caliper logs, directional surveys, geodetic measurements, and distance measurements to determine the dimensions and relative location of these holes, as well as measurements to determine the location and volume of all voids in each hydrodynamic measurement zone using, in a non-destructive way, such methods as electromagnetic measurements, radar, and acoustic sounding;

(iv) if an emplacement hole is horizontal, in the drilled holes specified in subparagraph (e)(ii) of this paragraph, and within the hydrodynamic measurement zones of the emplacement hole and each associated satellite hole, gamma-gamma, gamma, neutron, electrical resistivity, magnetic susceptibility, gravity, and acoustic logging; and

(v) magnetic surveys, in vertical satellite holes and drilled horizontal satellite holes, to obtain information necessary for the installation and positioning of transducers;

(d) all logging data and geometrical measurements obtained by Designated Personnel, in accordance with subparagraph (c) of this paragraph, including calibration data, shall be duplicated, and a copy of the data shall be provided to personnel of the Testing Party prior to departure from the test site of Designated Personnel who have carried out these measurements. Calibration data shall include information necessary to confirm the sensitivity of logging equipment under the conditions in which it is used;

(e) Designated Personnel shall have the right to receive:

(i) if an emplacement hole is vertical, core samples or, at the option of Designated Personnel, rock fragments from the emplacement hole and from each satellite hole, extracted at no more than 10 depths within each hydrodynamic measurement zone, specified by Designated Personnel. The total volume of core samples or rock fragments extracted at each depth shall be no less than 400 cubic centimeters and no more than 3000 cubic centimeters, unless the Parties otherwise agree; and

(ii) if an emplacement hole is horizontal, core samples or, at the option of Designated Personnel, rock fragments from the emplacement hole and each satellite hole within each hydrodynamic measurement zone. If core samples are extracted from the emplacement hole or an excavated satellite hole, they shall be extracted during drilling from each of no more than 10 holes drilled at stations specified by Designated Personnel. The diameter of each drilled

hole shall be no less than 0.09 meters and no more than 0.15 meters, and the depth of each hole shall be no more than the diameter of the emplacement hole or satellite hole at this station. Core samples shall be extracted at locations specified by Designated Personnel along each drilled hole. If core samples are extracted from a drilled satellite hole, they shall be extracted by personnel of the Testing Party during the drilling of the satellite hole, within each hydrodynamic measurement zone, at no more than 10 stations specified by Designated Personnel and under their observation. Rock fragments shall be extracted from the emplacement hole or an excavated satellite hole at each of no more than 10 stations specified by Designated Personnel. Core samples and rock fragments may be taken from no more than a total of 10 stations for each hole. If an emplacement hole or an excavated satellite hole is lined at any station specified by Designated Personnel for extracting core samples or rock fragments, personnel of the Testing Party shall enable Designated Personnel to extract core samples or rock fragments at such a station from native rock. The total volume of core samples or rock fragments extracted at each station shall be no less than 400 cubic centimeters and no more than 3000 cubic centimeters, unless the Parties otherwise agree;

(f) core samples or rock fragments may be extracted in accordance with subparagraph (e) of this paragraph by personnel of the Testing Party, under observation of Designated Personnel, or by Designated Personnel, at the option of the Testing Party;

(g) if personnel of the Testing Party do not extract core samples or rock fragments in accordance with subparagraph (e) of this paragraph, Designated Personnel shall have the right, using their own equipment, to extract such core samples or rock fragments in accordance with subparagraph (e) of this paragraph, under observation of personnel of the Testing Party;

(h) if an emplacement hole is vertical, and if the Testing Party, prior to arrival of Designated Personnel at the test site, has cased a total of 20 meters or more of the emplacement hole or any satellite hole within any hydrodynamic measurement zone, and if within 22 meters from this cased hole there is no uncased hole with a diameter no less than 0.3 meters, the Testing Party shall provide an uncased hole for each hole so cased, with respect to which the Verifying Party shall have the same rights as those specified in subparagraphs (c), (e), (f), and (g) of this paragraph. Within each hydrodynamic measurement zone the axis of each uncased hole shall be no less than 11 and no more than 22 meters from such a cased hole. If personnel of the Testing Party, under observation of Designated Personnel, extract core samples through coring during the drilling of this uncased hole, the diameter of the hole shall be no less than 0.09 meters. If Designated Personnel, under observation of personnel of the Testing Party, extract core samples from this uncased hole following drilling, the diameter of the uncased hole shall be no less than 0.3 meters;

(i) Designated Personnel shall have the right to retain core samples and rock fragments specified in subparagraphs (e), (f), (g), and (h) of this paragraph. Any such core samples or rock fragments shall be prepared in accordance with procedures agreed upon by the Parties for shipment to the territory of the Verifying Party; and

(j) logging, directional surveys, magnetic surveys, geodetic measurements, and extracting of core samples or rock fragments carried out in accordance with subparagraphs (c), (e), (f), (g), (h), and (i) of this paragraph shall begin at times chosen by the Testing Party and specified in the coordinated schedule. Designated Personnel shall have the right, within a period not to exceed 25 days, to carry out logging, directional surveys, magnetic surveys, geodetic measurements, and coring activities, unless the Parties otherwise agree and so specify in the coordinated schedule. The

Testing Party shall not emplace any explosive until the activities specified in this paragraph have been completed.

8. If the Verifying Party has notified the Testing Party that it intends to use the hydrodynamic yield measurement method with respect to a test of non-standard configuration having a planned yield exceeding 50 kilotons, and that it requires a reference test in accordance with paragraph 7 of Section III of this Protocol, the Testing Party shall provide for such a reference test for the non-standard test. To serve as a reference test, a test shall:

- (a) have a planned yield exceeding 50 kilotons;
- (b) be of standard configuration;
- (c) have a single explosive canister;
- (d) meet the following spacing criteria:
  - (i) the horizontal separation between the emplacement point of the reference test and each emplacement point of the non-standard test at which any explosive canister or its emplacement conditions differ from those specified for a test of standard configuration shall be no less than 300 meters and no more than 2000 meters;
  - (ii) each explosive canister of the test of non-standard configuration and the explosive canister of the associated reference test shall all be emplaced above the water table or shall all be emplaced below the water table; and
  - (iii) the depth of all emplacement points of the test of non-standard configuration shall be within 150 meters of the depth of the emplacement point of its associated reference test; and
- (e) be conducted either prior to, or within 12 months following, the conduct of the test of non-standard configuration for which it serves as a reference test.

9. Designated Personnel shall have the right:

- (a) to have access along agreed routes to the location of the test to carry out activities related to use of the hydrodynamic yield measurement method;
- (b) to have access to their equipment associated with the hydrodynamic yield measurement method from the time of its delivery to Designated Personnel at the test site, until it is transferred to personnel of the Testing Party in accordance with paragraph 7(i) of Section VIII of this Protocol, unless otherwise provided in this Protocol;
- (c) with respect to a test of standard configuration, as well as with respect to any explosion having a planned yield of 50 kilotons or less:
  - (i) if an emplacement hole is vertical, prior to the lowering of the explosive canister into the emplacement hole, to confirm by direct measurement the external dimensions of each explosive canister; to inspect visually the entire external structure of that canister and the choke section; to confirm by direct measurement that the choke section conforms to the specifications set forth in paragraph 2(c) of this Section; to observe continuously the explosive canister and any choke section from the time inspections and measurements, carried out in accordance with this subparagraph, begin; to observe the emplacement of the explosive canister into the emplacement hole and stemming of the emplacement hole from the time the entire explosive canister is last visible above the entrance of the emplacement hole until completion of stemming of each hydrodynamic measurement zone of the emplacement hole; to determine by direct measurement the depth of emplacement of the bottom part of any choke section; and to observe the stemming of the entire satellite hole; and
  - (ii) if an emplacement hole is horizontal, following placement of explosive canisters in the emplacement hole, and prior to the beginning of stemming around explosive canisters, to confirm by direct measurement the external dimensions of each explosive canister; to inspect visually the entire external

structure of each explosive canister; to confirm by direct measurement that each choke section conforms to the specifications set forth in paragraph 3(e) of this Section; to observe continuously each explosive canister and each choke section from the time inspections and measurements, carried out in accordance with this subparagraph, begin, until the completion of stemming around each explosive canister and choke section, or, at the option of the Testing Party, until the explosive canister and choke section are fixed in place with solidified stemming material, in which case, after a period of no more than 24 hours for placement of explosives, to observe the explosive canister, the choke section, and the completion of stemming around each explosive canister and choke section; and to observe the stemming of each hydrodynamic measurement zone of the emplacement hole, the stemming of any access or bypass drifts, the stemming of any voids in each hydrodynamic measurement zone connected to the emplacement hole; and to observe the entire stemming of each associated satellite hole;

(d) with respect to any explosion having a planned yield exceeding 50 kilotons and characteristics differing from those set forth in paragraph 2 or 3 of this Section with respect to a test of standard configuration:

(i) if an emplacement hole is vertical, prior to the lowering of an explosive canister into the emplacement hole, to confirm by direct measurement the external dimensions of each explosive canister; to inspect visually the external structure of each canister and each choke section; to confirm by direct measurement that each choke section conforms to any specifications provided by the Testing Party in accordance with paragraph 10(c)(iii) of Section XI of this Protocol; to observe continuously each explosive canister and each choke section from the time inspections and measurements, carried out in accordance with this subparagraph, begin; to observe the emplacement of each explosive canister into the emplacement hole and stemming of the emplacement hole from the time an entire explosive canister is last visible above the entrance of the emplacement hole until completion of stemming of each hydrodynamic measurement zone of the emplacement hole; to determine by direct measurement the depth of emplacement of the upper surface of each explosive canister; and to observe the entire stemming of each associated satellite hole;

(ii) if an emplacement hole is horizontal, following placement of all explosive canisters in the emplacement hole and prior to the beginning of stemming around the explosive canister, to confirm by direct measurement the external dimensions of each explosive canister; to inspect visually the entire external structure of each explosive canister; to confirm by direct measurement that each choke section conforms to any specifications provided by the Testing Party in accordance with paragraph 10(c)(iii) of Section XI of this Protocol; to observe continuously each explosive canister and each choke section from the time inspections and measurements, carried out in accordance with this subparagraph, begin, until the completion of stemming around each explosive canister and choke section, or, at the option of the Testing Party, until the explosive canister and choke section are fixed in place with solidified stemming material, in which case, after a period of no more than 24 hours for placement of explosives, to observe the explosive canister, the choke section, and the completion of stemming around each explosive canister and choke section; to observe the stemming of each hydrodynamic measurement zone of the emplacement hole, the stemming of any access or bypass drifts, the stemming of any voids in each

hydrodynamic measurement zone connected to the emplacement hole, except those voids and any access or bypass drifts designated by the Testing Party to remain unstemmed in accordance with paragraph 10(c) of Section XI of this Protocol; and to observe the entire stemming of each associated satellite hole; and

(iii) if a test is conducted in a cavity, to measure the shape and volume of the cavity after excavation and once again immediately prior to placement of explosive canisters with explosives or placement of explosives into explosive canisters. After placement of explosive canisters with explosives or placement of explosives into explosive canisters, Designated Personnel shall have the right to observe explosive canisters and to observe the stemming of each hydrodynamic measurement zone of the emplacement hole and any access or bypass drifts, and of any voids connected to the emplacement hole, within each hydrodynamic measurement zone, except those voids and any access or bypass drifts designated by the Testing Party to remain unstemmed, in accordance with paragraph 10(c) of Section XI of this Protocol; and to observe the entire stemming of each associated satellite hole;

(e) with respect to a test of standard configuration, as well as with respect to any explosion having a planned yield of 50 kilotons or less:

(i) if an emplacement hole is vertical, to unobstructed visual observation of the entrance to the emplacement hole and associated satellite hole from completion of stemming of the satellite hole and of the hydrodynamic measurement zones of the emplacement hole until departure of all personnel from the test location prior to the test; and

(ii) if an emplacement hole is horizontal, to unobstructed visual observation of sensing elements and cables until completion of stemming of each associated satellite hole, and of cables specified in paragraph 3(b) of Section VIII of this Protocol until completion of their installation in protective cableways specified in paragraph 4(d) of this Section, as well as observation of the entrance to the emplacement hole from completion of stemming of each satellite hole and of the hydrodynamic measurement zones of the emplacement hole until departure of all personnel from the test location prior to the test;

(f) with respect to any explosion having a planned yield exceeding 50 kilotons and characteristics differing from those set forth in paragraph 2 or 3 of this Section with respect to a test of standard configuration:

(i) if an emplacement hole is vertical, to unobstructed visual observation of the entrance to the emplacement hole and each satellite hole from completion of stemming of all satellite holes and the hydrodynamic measurement zones of the emplacement hole until departure of all personnel from the test location prior to the test; and

(ii) if an emplacement hole is horizontal, to unobstructed visual observation of the sensing elements and cables and transducers until completion of stemming of all associated satellite holes, and of cables specified in paragraph 3(b) of Section VIII of this Protocol until completion of their installation in protective cableways specified in paragraph 6(c) of this Section of the Protocol, as well as the entrance to the emplacement hole from completion of stemming of all satellite holes and the hydrodynamic measurement zones of the emplacement hole until departure of all personnel from the test location prior to the test;



(g) to monitor electrically the integrity and performance of their equipment specified in paragraphs 3(a), 3(b), 3(c), 3(d), 3(e), 3(f), and 3(g) of Section VIII of this Protocol and to observe continuously the cables specified in paragraphs 3(f) and 3(g) of Section VIII of this Protocol and the cableways in which they are installed as specified in paragraphs 4(d) and 6(c) of this Section, from the time emplacement of sensing elements and cables and transducers begins until departure of all personnel from the test location. Following departure of personnel and until reentry of personnel to the test location following the test, Designated Personnel shall have the right to observe remotely, by means of closed-circuit television, the surface area containing their hydrodynamic yield measurement equipment;

(h) to monitor electrically the integrity and performance of their equipment specified in paragraphs 3(a), 3(b), 3(c), 3(d), 3(f), and 3(g) of Section VIII of this Protocol from the command and monitoring facility specified in paragraph 3(e) of Section VIII of this Protocol, from commencement of its use by Designated Personnel until completion of the activities specified in paragraphs 9(m) and 14(b) of this Section;

(i) to transmit from the command and monitoring facility to each hydrodynamic recording facility the commands required for operation of that hydrodynamic recording facility;

(j) to use channels provided by the Testing Party within its telemetry system for transmission of information specified in subparagraphs (h), (i), (k), and (l) of this paragraph, if such a system is used at the test site of the Testing Party, or to use for these purposes its own cables, specified in paragraph 3(g) of Section VIII of this Protocol;

(k) to carry out hydrodynamic yield measurements and to record the hydrodynamic data;

(l) to transmit the hydrodynamic yield measurement data from each hydrodynamic recording facility to the command and monitoring facility; and

(m) to reenter the area containing each hydrodynamic recording facility at the same time as personnel of the Testing Party, and to have access, in accordance with procedures agreed upon by the Parties and accompanied by personnel of the Testing Party, to each hydrodynamic recording facility, for the purposes of retrieving and verifying the authenticity of recorded data and assessing the performance of the equipment of the Verifying Party during data recording and transmission.

10. During the carrying out of hydrodynamic yield measurements:

(a) the Representative of the Testing Party shall notify, in writing, the Designated Personnel Team Leader at the test site of the beginning of the period of readiness and the planned time of the test, in accordance with paragraph 13 of Section IV of this Protocol;

(b) the Testing Party shall produce an event readiness signal in the interval from seven to 15 minutes prior to the planned time of the test, as specified by the Verifying Party, with an accuracy of plus or minus 100 milliseconds. The parameters for this signal, produced by the Testing Party, and procedures for its transmission and reception shall be agreed upon by the Parties;

(c) Designated Personnel shall have the right to generate, using the trigger conditioner devices approved by the Parties, a timing reference signal using an electromagnetic pulse from their sensing elements and cables. This timing reference signal shall be generated, transmitted, and used by Designated Personnel without intervention by personnel of the Testing Party. For each explosion in a test, the trigger conditioner shall receive signals from one or two hydrodynamic yield measurement cables;

(d) Designated Personnel, under observation of personnel of the Testing Party, shall have the right to install the trigger conditioner devices. From the time of installation of these devices until the time of the test:

(i) Designated Personnel shall have the right to test and monitor the operation of the devices;

(ii) personnel of the Testing Party shall have the right to monitor the operation of the devices and to monitor and record the timing reference signal; and

(iii) neither Designated Personnel nor personnel of the Testing Party shall have physical access to the devices, except under observation of personnel of the other Party;

(e) the Testing Party shall provide, at the request of the Verifying Party, an electrical pulse corresponding to the nuclear explosion zero-time, with an accuracy of plus or minus one microsecond, for each explosion. The parameters for this signal and procedures for its transmission and reception shall be agreed upon by the Parties;

(f) the Testing Party shall have exclusive control over the generation of signals specified in subparagraphs (b) and (e) of this paragraph;

(g) Designated Personnel, under observation of personnel of the Testing Party, shall install in each cable from each satellite hole to a hydrodynamic recording facility an anti-intrusiveness device for interrupting the transmission, from the sensing elements and cables and transducers to the hydrodynamic recording facility of the Verifying Party, of any signal unrelated to hydrodynamic yield measurements. These devices shall be provided by the Testing Party from among those approved by both Parties and shall not interfere with the ability of Designated Personnel to record data required for hydrodynamic yield measurements of each explosion in a test. From the time of installation of these devices until the final dry run, personnel of each Party shall have the right to test and monitor the operation of the devices and to have physical access to them only under observation of personnel of the other Party. Sole control over the triggering of these devices shall be transferred to the Testing Party at the time of departure of all personnel from the test location prior to the test;

(h) each hydrodynamic recording facility shall have an independent grounding loop with an impedance no greater than 10 ohms;

(i) the shields of all cables associated with sensing elements and cables and transducers of the Verifying Party shall be grounded:

(i) at the input to each hydrodynamic recording facility of the Verifying Party;

(ii) at the output of each anti-intrusiveness device;

(iii) at the input of each trigger conditioner device; and

(iv) in those cables associated with sensing elements and cables in which no trigger conditioner device is installed, at the input of the anti-intrusiveness device;

(j) grounding of each hydrodynamic recording facility, as well as grounding of cables associated with the sensing elements and cables and transducers of the Verifying Party, shall be carried out by Designated Personnel under observation of personnel of the Testing Party. The grounding system of each hydrodynamic recording facility, as well as of cables associated with the sensing elements and cables and transducers shall be under the joint control of the Parties;

(k) Designated Personnel shall have the right to install, under observation of personnel of the Testing Party, an isolation transformer at the input of each anti-intrusiveness device or trigger conditioner device. From the time of installation of these devices until the time of the test, neither Designated Personnel nor personnel of the Testing Party shall have physical access to these devices, except under observation of personnel of the other Party;

(l) the Testing Party shall have the right to install, at a distance of no less than 50 meters from each hydrodynamic recording facility, a facility containing instrumentation for monitoring and recording the timing reference signal, for controlling and monitoring the operation of the anti-intrusiveness devices, and for the transmission of control and trigger signals. Signals between the instrumentation facility of the Testing Party and

each hydrodynamic recording facility shall be transmitted over fiber optic cables. The Testing Party shall provide for the installation, in each hydrodynamic recording facility, of terminal devices for converting optical signals into electrical signals produced in accordance with subparagraphs (b) and (e) of this paragraph, and for monitoring the interval of interruption and for monitoring the power supply of the anti-intrusiveness device, in accordance with subparagraph (g) of this paragraph. The Verifying Party shall provide for the installation in the facility of the Testing Party of a terminal device for converting an optical signal into an electrical time referencing signal provided in accordance with subparagraph (d)(ii) of this paragraph. These provided devices shall be installed under observation of personnel of both Parties and sealed by the Party providing the device. The instrumentation facilities specified in this subparagraph shall be under the exclusive control of the Testing Party; and

(m) upon arrival at the test site, Designated Personnel shall provide the Testing Party with a copy of the block diagram of the equipment configuration for hydrodynamic yield measurements for the test together with notification of any changes from the block diagram approved during the familiarization process provided in paragraph 6(d)(i) of Section VIII of this Protocol. No less than two days prior to the final dry run, Designated Personnel shall notify the Testing Party, in writing, of any additional changes in this block diagram. In the event of any changes in the block diagram, the Testing Party shall have the right, within one day following such notification, to disapprove any changes it finds inconsistent with its non-intrusiveness, containment, safety, or security requirements. Such disapproval shall be provided, in writing, to the Designated Personnel Team Leader, stating the specific reasons for disapproval. Any changes not disapproved shall be deemed accepted. If a change is disapproved, Designated Personnel shall configure the equipment in accordance with the block diagram previously approved in accordance with paragraph 6(d)(i) of Section VIII of this Protocol, unless the Testing Party otherwise agrees.

11. Personnel of the Testing Party shall have the right to observe use of equipment by Designated Personnel at the test site, with access to each hydrodynamic recording facility and the command and monitoring facility of the Verifying Party subject to the following:

(a) at any time prior to the test that Designated Personnel are not present in these facilities, these facilities shall be sealed by the seals of both Parties. Seals shall be removed only under observation of personnel of both Parties;

(b) prior to the test, except for periods specified in subparagraphs (c) and (d) of this paragraph, personnel of the Testing Party may enter these facilities only with the agreement of the Designated Personnel Team Leader and when accompanied by the Team Leader or his designated representative;

(c) for the period of two hours prior to the final dry run, and for the period of two hours prior to the time fixed for withdrawal of all personnel to the area designated for occupation during the test, personnel of the Testing Party, not to exceed two, shall have the right to join Designated Personnel in each hydrodynamic recording facility, to observe final preparations of the equipment and to confirm the agreed configuration of that equipment. All personnel shall leave the facility together; and

(d) for a period beginning two hours prior to a test and ending upon completion of the activities specified in paragraphs 9(m) and 14(b) of this Section, personnel of the Testing Party, not to exceed two, shall have the right to join Designated Personnel in the command and monitoring facility to observe final command and monitoring of the recording equipment and acquisition and duplication of data, and to receive a copy of these data.

12. Designated Personnel shall have the right to obtain photographs taken by personnel of the Testing Party using photographic cameras of the Testing Party or, at the option of the Testing Party,

photographic cameras provided by the Verifying Party. These photographs shall be taken under the following conditions:

- (a) the Testing Party shall identify those of its personnel who will take photographs;
- (b) photographs shall be taken at the request and under observation of Designated Personnel. If requested by Designated Personnel, such photographs shall show the size of an object by placing a measuring scale, provided by Designated Personnel, alongside that object during the photographing;
- (c) Designated Personnel shall determine whether photographs conform to those requested, and, if not, repeat photographs shall be taken; and
- (d) before completion of any photographed operation related to emplacement, and prior to the time at which an object that is being photographed becomes permanently hidden from view, Designated Personnel shall determine whether requested photographs are adequate. If they are not adequate, before the operation shall proceed additional photographs shall be taken until the Designated Personnel determine that the photographs of that operation are adequate. This photographic process shall be undertaken as expeditiously as possible, and in no case shall the cumulative delay resulting from this process exceed two hours for each of the operations specified in paragraphs 13(a), 13(b), 13(d), 13(e), and 13(f) of this Section, unless the Parties otherwise agree, except that stemming shall not be interrupted as a result of the photographic process.

13. Designated Personnel shall have the right to obtain photographs, taken in accordance with paragraph 12 of this Section, of the following:

- (a) the emplacement and installation of equipment associated with the hydrodynamic yield measurement method, including all sensing elements and cables and transducers and their connections, each hydrodynamic recording facility, the command and monitoring facility, anti-intrusiveness devices, and trigger conditioner devices;
- (b) the stemming of all satellite holes;
- (c) all choke sections and the exterior of each explosive canister;
- (d) if an emplacement hole is vertical, the emplacement of each explosive canister and the stemming of the hydrodynamic measurement zones of the emplacement hole;
- (e) if an emplacement hole is horizontal, the interior of the emplacement hole within 20 meters of the emplacement point of each installed explosive canister and the stemming of hydrodynamic measurement zones of the emplacement hole;
- (f) core samples and rock fragments obtained in accordance with paragraphs 5(e), 5(f), 5(g), 5(h), 7(e), 7(f), 7(g), and 7(h) of this Section, the equipment and activities associated with extracting such samples, as well as the interior of the emplacement hole, if an emplacement hole is horizontal, at the stations where core samples or rock fragments were extracted; and
- (g) with the agreement of the Testing Party, other activities of Designated Personnel directly related to the use of the hydrodynamic yield measurement method.

14. The following procedures shall apply to the recovery and transfer of data:

- (a) no later than the final dry run, Designated Personnel shall inform personnel of the Testing Party of the procedures for recovering and verifying the authenticity of data and shall advise personnel of the Testing Party, at the time of data recovery, of any changes Designated Personnel make in those procedures and the reasons for such changes;
- (b) following the test, Designated Personnel, in the presence of personnel of the Testing Party, shall enter the hydrodynamic recording facility and recover all recordings of data taken at the time of the test. Designated Personnel shall prepare two identical copies of such data. Personnel of the Testing Party shall select one of the two identical copies. Designated Personnel shall retain the other copy, but no other such data; and
- (c) following the completion of the activities specified in paragraph 9(m) of this Section and subparagraph (b) of this paragraph, Designated Personnel shall leave the



hydrodynamic recording facility and the command and monitoring facility at the same time as personnel of the Testing Party. Designated Personnel shall have no further access to their hydrodynamic recording facility, command and monitoring facility, or equipment until these are returned to the Verifying Party in accordance with paragraph 7(i)(ii) of Section VIII of this Protocol, unless the Parties otherwise agree, in which case access by Designated Personnel to their facilities and equipment shall be under observation of personnel of the Testing Party.

15. Designated Personnel shall not be present in areas from which all personnel of the Testing Party have been withdrawn in connection with the test, but shall have the right to reenter those areas, as provided in this Protocol, at the same time as personnel of the Testing Party.

16. All hydrodynamic yield measurement activities shall be carried out in accordance with the coordinated schedule. Designated Personnel who will carry out the activities specified in this Section and in paragraph 7(e) of Section VIII of this Protocol shall arrive at the test site in accordance with the coordinated schedule, but no less than three days prior to the date specified by the Testing Party for the beginning of these activities.

17. The number of Designated Personnel carrying out hydrodynamic yield measurements with respect to a test of standard configuration conducted in a single emplacement hole, without regard to the number of ends of that emplacement hole, as these are specified in paragraph 3(b) of this Section, shall not exceed, at any time, 35 individuals, and the number of Designated Personnel, at any time, carrying out hydrodynamic yield measurements with respect to a test of non-standard configuration or a test conducted in more than one emplacement hole shall not exceed, at any time, 45 individuals, unless the Parties otherwise agree. Within these totals, the coordinated schedule shall be developed so as to ensure that the number of Designated Personnel for carrying out hydrodynamic yield measurements with respect to a specific test shall not exceed:

(a) if a test is of standard configuration, for carrying out activities related to hydrodynamic yield measurements, other than activities specified in paragraph 5(j) of this Section, 26 individuals and, for carrying out activities specified in paragraph 5(j) of this Section:

(i) if an emplacement hole is vertical, 18 individuals; or

(ii) if an emplacement hole is horizontal, 22 individuals; or

(b) if a test is of non-standard configuration or is conducted in more than one emplacement hole, for carrying out activities related to hydrodynamic yield measurements other than activities specified in paragraph 5(j) or 7(j) of this Section, 35 individuals and, for carrying out activities specified in paragraph 5(j) or 7(j) of this Section, 26 individuals; and

(c) Designated Personnel shall include at least two individuals fluent in the language of the Testing Party.

#### **SECTION VI. SEISMIC YIELD MEASUREMENT METHOD**

1. For the purposes of the use of the seismic yield measurement method, the Verifying Party shall have the right to carry out independent seismic measurements at three Designated Seismic Stations in the territory of the Testing Party, in accordance with this Section. Designated Seismic Stations of each Party shall meet the following criteria:

(a) be located within its continental territory;

(b) each shall have an Lg-wave signal-to-noise ratio not less than nine for any test in its territory having a yield of 150 kilotons. The signal-to-noise ratio shall be defined as one-half of the maximum peak amplitude of the Lg-wave signal divided by the root-mean-square value of the seismic noise in the recording segment immediately preceding the arrival of the P-wave signal and having a duration of no less than one minute. The signals and the noise shall be measured on a vertical component of the recording in the frequency range typical of Lg-waves recorded at the Designated Seismic Station;

(c) ensure wide azimuthal coverage of each of its test sites, insofar as permitted by their geographic location; and



(d) be chosen from those existing seismic stations that provide earthquake and other seismic event data, including tests, to archives in the territory of the Testing Party, accessible to the Verifying Party.

2. The United States of America designates the following three seismic stations as meeting the criteria specified in paragraph 1 of this Section: Tulsa, Oklahoma (TUL) (35°55'N; 095°48'W); Black Hills, South Dakota (RSSD)(44°07'N; 104°02'W); and Newport, Washington (NEW) 48°16'N; 117°07'W).

3. The Union of Soviet Socialist Republics designates the following three seismic stations as meeting the criteria specified in paragraph 1 of this Section: Arti (ARU)(56°26'N; 058°34'E); Novosibirsk (NVS)(54°51'N; 083°16'E); and Obninsk (OBN)(55°07'N; 036°34'E).

4. Upon entry into force of the Treaty each Party shall provide the other Party with the following information on each of its Designated Seismic Stations:

- (a) a site diagram of the station showing the areas assigned for use by Designated Personnel;
- (b) elevation above mean sea level to the nearest 10 meters; and
- (c) types of rock on which it is located.

5. The Testing Party shall have the right to replace one or more of its Designated Seismic Stations, provided:

(a) the new Designated Seismic Station meets all the criteria specified in paragraph 1 of this Section;

(b) notification of the decision of the Testing Party to select a new Designated Seismic Station, together with the station name and its reference code, the station coordinates to the nearest one minute of geographic latitude and longitude, and the information and site diagram for the new station specified in paragraph 4 of this Section, is provided to the Verifying Party no less than 90 days prior to the planned date of any test with respect to which the Verifying Party has notified the Testing Party that it intends to use the seismic yield measurement method and for which this Designated Seismic Station would be used; and

(c) seismic data, for the period from entry into force of the Treaty until the new Designated Seismic Station begins use as a Designated Seismic Station, are placed in archives in the territory of the Testing Party, accessible to the Verifying Party. If a Designated Seismic Station is replaced within the first four years following entry into force of the Treaty, seismic data for at least four years of operation of the new Designated Seismic Station shall be placed in archives in the territory of the Testing Party, accessible to the Verifying Party.

6. If any Designated Seismic Station does not meet the criteria specified in paragraph 1 of this Section, the Verifying Party shall have the right to request its replacement with another Designated Seismic Station that meets such criteria. Any request by the Verifying Party for replacement shall state the reasons this Designated Seismic Station does not meet the criteria specified in paragraph 1 of this Section, and shall be transmitted to the Testing Party through the Nuclear Risk Reduction Centers. If the Parties are unable to resolve the issue of replacement of a Designated Seismic Station, it shall immediately be referred to the Bilateral Consultative Commission in accordance with paragraph 1(a) of Section XI of this Protocol for resolution.

7. The Testing Party shall bear the costs of replacing any Designated Seismic Station in its territory, including any costs of eliminating the previous Designated Seismic Station and the costs of preparing a new Designated Seismic Station in accordance with paragraph 6 of this Section.

8. If requested by the Verifying Party, the Testing Party shall provide, according to agreed technical specifications, at each Designated Seismic Station, for the exclusive use of Designated Personnel:

- (a) a surface vault and pier for the installation of seismic sensors, to be located not less than 100 meters and not more than 200 meters from the seismometers of the Testing Party, unless the Parties otherwise agree;

- (b) a borehole for installation of seismic sensors, to be located not less than 100 meters and not more than 200 meters from the seismometers of the Testing Party, unless the Parties otherwise agree;
- (c) a working facility with an area not less than 20 square meters, for the installation and operation of equipment by Designated Personnel and situated not less than 75 meters and not more than 125 meters from the seismometers of the Verifying Party, unless the Parties otherwise agree;
- (d) a covered cableway that will allow Designated Personnel to connect devices in the facilities specified in subparagraphs (a), (b), and (c) of this paragraph;
- (e) a facility for the storage of shipping containers and spare parts for the use of Designated Personnel while carrying out their activities at the Designated Seismic Stations; and
- (f) electrical power from its standard electrical network through converters provided by the Verifying Party or, by agreement of the Parties, by the Testing Party.

9. At each Designated Seismic Station, personnel of the Testing Party shall:

- (a) have the right to observe the installation and calibration of equipment by Designated Personnel, but at all other times they may be present only at the invitation of the Designated Personnel Team Leader and when accompanied by the Designated Personnel Team Leader or his designated representative;
- (b) not interfere with the activities of Designated Personnel with regard to the installation, calibration, adjustment, and operation of equipment; and
- (c) provide assistance and logistical support to Designated Personnel in accordance with paragraph 13 of Section XI of this Protocol, and, by agreement of the Parties, other assistance and logistical support requested by Designated Personnel.

10. In carrying out seismic measurements at the Designated Seismic Stations, Designated Personnel shall have the right to:

- (a) confirm that the agreed technical specifications for the installation and operation of the equipment have been met during the time periods specified in the coordinated schedule;
- (b) have access to their equipment from the time of the arrival of Designated Personnel at, and until their departure from, each Designated Seismic Station, unless otherwise provided in this Protocol;
- (c) install, calibrate, adjust, and continuously operate their equipment;
- (d) record seismic signals and universal time signals continuously from the time their equipment is installed until two hours after the test, as well as process data to monitor the quality of recorded data and retrieve and copy all recorded data;
- (e) use their own electrical sources to supply electrical power to their equipment specified in paragraph 4 of Section VIII of this Protocol;
- (f) install and operate tamper-detection equipment and observe the cableway and the exterior of the facility in which the seismic sensors are installed;
- (g) assess the integrity and performance of their equipment and confirm that there has been no interference with seismic measurements and the recording of such measurements; and
- (h) lock and seal the facilities specified in paragraphs 8(a), 8(b), 8(c), and 8(e) of this Section with their own seals.

11. The Representative of the Testing Party shall notify, in writing and referenced to Universal Time Coordinated, the Designated Personnel Team Leader at each Designated Seismic Station of the beginning of the period of event readiness and the planned time of the test, to the nearest one second, in accordance with paragraph 13 of Section IV of this Protocol.

12. At each Designated Seismic Station, Designated Personnel shall:

- (a) upon arrival, provide the Representative of the Testing Party with a description of the recording format and the computer program to enable the Testing Party to read digital data, if digital recordings of data are made;

(b) prior to departure, provide the Representative of the Testing Party with the following:

- (i) a copy of all data recorded by all equipment used by Designated Personnel, on the same medium as that on which these data were recorded;
- (ii) a graphic representation on a paper medium of the seismic data of the test for a period of time beginning one minute prior to the test and ending 30 minutes following the test; and
- (iii) the results of the calibration of all seismic equipment, including the amplitude-frequency characteristics of the equipment used to measure and record the seismic data; and

(c) prior to their departure, prepare for inspection, storage in accordance with the conditions chosen by the Testing Party, or shipment of their equipment.

13. Designated Personnel shall have the right to acquire photographs of operations and activities related to seismic yield measurement at the Designated Seismic Stations. Photographs shall be taken by personnel of the Testing Party, using their own photographic cameras, or, at the option of the Testing Party, by Designated Personnel using their own photographic cameras.

(a) If the Testing Party takes photographs, the following conditions shall be met:

- (i) the Testing Party shall identify those of its personnel who will take photographs;
- (ii) photographs shall be taken at the request and under observation of Designated Personnel. If requested by Designated Personnel, such photographs shall show the size of an object being photographed by placing a measuring scale, provided by Designated Personnel, alongside that object during the photographing; and
- (iii) Designated Personnel shall determine whether photographs that were taken conform to those requested, and, if not, repeat photographs shall be taken.

(b) If Designated Personnel take photographs, the following conditions shall be met:

- (i) the Verifying Party shall identify those of its Designated Personnel who will take photographs; and
- (ii) photographs shall be taken under observation of personnel of the Testing Party, unless otherwise agreed by the Parties.

14. All activities of Designated Personnel at the Designated Seismic Stations shall be carried out in accordance with the coordinated schedule. Designated Personnel shall arrive at the Designated Seismic Stations in accordance with this schedule, but no less than 10 days prior to the planned date of the test. Designated Personnel shall depart the Designated Seismic Station within two days following the test.

15. If the planned date of a test is postponed by more than 10 days following receipt of the most recent notification, Designated Personnel shall have the right to leave the Designated Seismic Stations or, if requested by the Representative of the Testing Party, shall depart the Designated Seismic Stations for a mutually agreed location within the territory of the Testing Party or depart the territory of the Testing Party through the point of entry. If Designated Personnel leave the Designated Seismic Stations, they shall have the right to seal their equipment located at the stations. The seals shall not be broken except by Designated Personnel under observation of personnel of the Testing Party. Designated Personnel shall have the right to reoccupy the Designated Seismic Stations no less than 72 hours prior to the next planned time of the test.

16. The number of Designated Personnel carrying out seismic measurements at each Designated Seismic Station shall not exceed five. At least one individual fluent in the language of the Testing Party shall be among Designated Personnel at each Designated Seismic Station.

## **SECTION VII. ON-SITE INSPECTION**

1. In carrying out on-site inspection, the Verifying Party shall have the right to confirm the validity of the geological, geophysical, and geometrical information provided in accordance with paragraphs 4 and 9 of Section IV of this Protocol, in accordance with the following procedures:

(a) the Testing Party shall provide Designated Personnel, upon their arrival at the test site, with the results of any studies of core samples and rock fragments extracted from each emplacement hole and any exploratory holes and tunnels, and the results of logging and geodetic measurements carried out in each emplacement hole and any exploratory holes and tunnels, relevant to the geology and geophysics of the emplacement medium, if the Testing Party carried out such studies and measurements;

(b) using their own equipment and under observation of personnel of the Testing Party, Designated Personnel shall have the right to carry out:

(i) if an emplacement hole is vertical, in the emplacement hole, from the end of the hole to the entrance to the hole, gamma-gamma, gamma, neutron, electrical resistivity, magnetic susceptibility, gravity, acoustic, television, and caliper logging, and measurements of the depth and cross section of the emplacement hole, as well as measurements to determine the location and volume of voids, using, in a non-destructive way, such methods as electromagnetic measurements, radar, and acoustic sounding; and

(ii) if an emplacement hole is horizontal, in the holes specified in subparagraph (d)(ii) of this paragraph, and in the emplacement hole in the regions extending from each end of the emplacement hole to a point located 300 meters from the corresponding emplacement point in the direction of the entrance to the emplacement hole, gamma-gamma, gamma, neutron, electrical resistivity, magnetic susceptibility, gravity, acoustic, and caliper logging, and measurements of the length and cross section of the emplacement hole, as well as measurements to determine the location and volume of voids, using, in a non-destructive way, such methods as electromagnetic measurements, radar, and acoustic sounding;

(c) all logging and geometrical measurement data obtained by Designated Personnel in accordance with subparagraph (b) of this paragraph, including calibration data, shall be duplicated, and a copy of these data shall be provided to personnel of the Testing Party prior to the departure from the test site of Designated Personnel who have carried out those measurements. Calibration data shall include information needed to confirm the sensitivity of logging equipment under the conditions in which it is used;

(d) Designated Personnel shall have the right to receive:

(i) if an emplacement hole is vertical, core samples or rock fragments, at the option of Designated Personnel, extracted from the emplacement hole at 10 depths specified by Designated Personnel, plus one additional depth for every complete 50-meter distance between the uppermost and lowest emplacement points. The total volume of core samples or rock fragments extracted at each of the specified depths shall be no less than 400 cubic centimeters and no more than 3000 cubic centimeters, unless the Parties otherwise agree; and

(ii) if an emplacement hole is horizontal, core samples or rock fragments, at the option of Designated Personnel, from the emplacement hole in the regions extending from each end of the emplacement hole to a point located 300 meters from the corresponding emplacement point in the direction of the entrance to the emplacement hole. Core samples shall be extracted during drilling from each of five holes drilled at stations in the emplacement hole, specified by Designated Personnel. These five stations shall be separated from each other by no less than 15 meters. At each station the hole shall be drilled in a direction specified by Designated Personnel, except that

at each station within 65 meters of each emplacement point the Testing Party shall have the right to exclude two 90-degree sectors separated by a sector of 90 degrees. The diameter of each drilled hole shall be no less than 0.09 meters and no more than 0.15 meters, and the depth of each hole shall be no more than the diameter of the emplacement hole at that station. Core samples shall be extracted at locations specified by Designated Personnel along the drilled hole. Rock fragments shall be extracted from the walls of the emplacement hole at five stations specified by Designated Personnel. The total volume of core samples or rock fragments extracted at each station shall be no less than 400 cubic centimeters and no more than 3000 cubic centimeters, unless the Parties otherwise agree.

(e) core samples or rock fragments, at the option of Designated Personnel, shall be extracted, in accordance with subparagraph (d) of this paragraph, by personnel of the Testing Party, under observation of Designated Personnel, or by Designated Personnel, at the option of the Testing Party;

(f) if the Testing Party does not extract core samples or rock fragments in accordance with subparagraph (d) of this paragraph, Designated Personnel shall have the right to do so, using their own equipment and under observation of personnel of the Testing Party;

(g) if, prior to arrival of Designated Personnel at the test site, the Testing Party has cased more than a total of 20 meters within any 100-meter segment of a vertical emplacement hole in the region extending from the end of the emplacement hole to a point 300 meters from the planned emplacement point in the direction of the entrance to the emplacement hole, the Testing Party shall provide an uncased hole with respect to which the Verifying Party shall have the same rights as those specified for an emplacement hole in subparagraphs (b), (d), (e), and (f) of this paragraph. This uncased hole shall be located no more than 50 meters from the emplacement hole and shall have a depth no less than that of the emplacement hole. If personnel of the Testing Party, under observation of Designated Personnel, extract core samples through coring during the drilling of this uncased hole, the diameter of this hole shall be no less than 0.09 meters. If Designated Personnel, under observation of personnel of the Testing Party, extract core samples from this uncased hole following drilling, the diameter of this uncased hole shall be no less than 0.3 meters; and

(h) Designated Personnel shall have the right to retain core samples and rock fragments specified in subparagraphs (d), (e), (f), and (g) of this paragraph. Any such core samples or rock fragments shall be prepared in accordance with the procedures agreed upon by the Parties for shipment to the territory of the Verifying Party.

2. Designated Personnel shall have the right:

(a) if an emplacement hole is vertical, to observe the emplacement of each explosive canister into the emplacement hole from the time the bottom of the canister is last visible above the entrance of the emplacement hole, and to determine by direct measurement the depth of emplacement of the bottom of the canister;

(b) if an emplacement hole is horizontal, to determine by direct measurement the location of each explosive canister in the emplacement hole, and to confirm the presence of at least 10 meters of stemming, as specified in subparagraph (c)(ii) of this paragraph, in any previously stemmed tunnel that had provided access to an explosive canister, using, in a non-destructive way, such methods as electromagnetic measurements, radar, and acoustic sounding;

(c) to observe stemming of each emplacement hole:

(i) if an emplacement hole is vertical, until a solid concrete plug no less than three meters thick is installed above the explosive canister closest to the entrance to the emplacement hole; and

(ii) if an emplacement hole is horizontal, until access to any explosive canister has been prevented by installation of stemming material for a



distance no less than 10 meters, including the installation of a solid concrete plug no less than three meters thick;

(d) to have access along agreed routes to the location of the test to carry out activities related to on-site inspection;

(e) to have access to their equipment associated with the carrying out of on-site inspection from the time of its transfer to Designated Personnel at the test site, until it is transferred to personnel of the Testing Party in accordance with paragraph 9(g) of Section VIII of this Protocol, unless otherwise provided in this Protocol;

(f) if an emplacement hole is vertical, to have access, for the purpose of visual inspection of the ground surface, to the area delineated by a circle having a radius of 300 meters, centered on the entrance to the emplacement hole; and

(g) if an emplacement hole is horizontal, to have access, for the purpose of visual inspection of the ground surface, to the area delineated by a circle having a radius of 300 meters, centered directly above the emplacement point of each explosive canister.

3. Designated Personnel shall have the right to obtain photographs associated with on-site inspection, which shall be taken in accordance with paragraph 12 of Section V of this Protocol, of the following:

(a) if an emplacement hole is vertical, the emplacement of each explosive canister and the stemming of the emplacement hole specified in paragraph 2(c)(i) of this Section;

(b) if an emplacement hole is horizontal, the interior of the emplacement hole within 20 meters of the emplacement point of each explosive canister, and the stemming of the emplacement hole specified in paragraph 2(c)(ii) of this Section;

(c) core samples and rock fragments, extracted in accordance with paragraphs 1(d), 1(e), 1(f), and 1(g) of this Section, the equipment and activities associated with extracting such samples, as well as the interior of the emplacement hole, if the emplacement hole is horizontal, at the stations where core samples and rock fragments were extracted; and

(d) with the agreement of the Testing Party, other activities of Designated Personnel directly related to on-site inspection.

4. In no case shall the cumulative delay resulting from the photographic process specified in paragraph 3 of this Section exceed two hours for each of the operations specified in paragraph 3 of this Section, unless the Parties otherwise agree, except that stemming shall not be interrupted as a result of the photographic process.

5. All on-site inspection activities shall be carried out in accordance with the coordinated schedule. Designated Personnel shall have the right, within a period not to exceed 15 days, to carry out logging and coring activities specified in paragraph 1 of this Section, unless the Parties otherwise agree and so specify in the coordinated schedule. These activities shall be completed no less than one day prior to the beginning of emplacement of explosives. Upon completion of the activities specified in paragraph 1 of this Section, Designated Personnel shall depart the territory of the Testing Party, except that Designated Personnel who will also participate in the activities specified in paragraph 2 of this Section shall remain at the test site, if the Parties decide that this is required by the coordinated schedule. Otherwise, Designated Personnel shall depart the territory of the Testing Party or, if agreed by the Parties, they may depart to another point within the territory of the Testing Party. All Designated Personnel who will carry out the activities specified in paragraph 2 of this Section shall arrive at the test site in accordance with the coordinated schedule, but no less than three days prior to the date specified by the Testing Party for the beginning of these activities.

6. The number of Designated Personnel carrying out the activities specified in paragraph 1 of this Section shall not exceed 23 at any time. The number of Designated Personnel carrying out activities specified in paragraphs 2(a), 2(b), and 2(c) of this Section shall not exceed five at any time. At least one individual fluent in the language of the Testing Party shall be among Designated Personnel.

## **SECTION VIII. EQUIPMENT**

1. Designated Personnel, in carrying out activities related to verification in accordance with this Protocol, shall have the right to bring into the territory of the Testing Party, install, and use:

- (a) if the Verifying Party has provided notification of its intent to use the hydrodynamic yield measurement method, part or all of the equipment specified in paragraph 3 of this Section;
- (b) if the Verifying Party has provided notification of its intent to use the seismic yield measurement method, part or all of the equipment specified in paragraph 4 of this Section;
- (c) if the Verifying Party has provided notification of its intent to carry out on-site inspection, part or all of the equipment specified in paragraph 5 of this Section;
- (d) maintenance and support equipment and spare parts necessary for the installation and functioning of equipment of the Verifying Party;
- (e) electrical power supplies, converters, and associated cables;
- (f) photographic equipment, if the Testing Party does not provide such equipment;
- (g) locks, seals, and equipment necessary for installing seals of the Verifying Party and checking their integrity;
- (h) medical and health physics equipment and supplies, personal protective gear, recreational items, and such other items as may be agreed upon by the Parties;
- (i) office equipment and supplies, including, but not limited to, copying and facsimile machines, and personal computers;
- (j) closed-circuit television equipment for the purpose of carrying out remote observation by Designated Personnel, in accordance with paragraph 9(g) of Section V of this Protocol, if the Testing Party does not provide such equipment; and
- (k) satellite communications equipment, if the Testing Party does not provide satellite communications for Designated Personnel.

2. During the first meeting of the Coordinating Group for a specific test, the Parties shall agree, within 15 days, upon such additional materials, temporary structures, and equipment as may be requested in writing by the Verifying Party and which shall be supplied by the Testing Party for use by Designated Personnel. Such additional materials, temporary structures, and equipment, with their descriptions and operating instructions, shall be provided to Designated Personnel in accordance with the coordinated schedule.

3. The list of equipment for the purposes of the use of the hydrodynamic yield measurement method in accordance with Section V of this Protocol shall include:

- (a) sensing elements and cables and transducers;
- (b) electrical cables for transmission of hydrodynamic data from the entrance of each horizontal satellite hole to the entrance of the horizontal emplacement hole with which it is associated;
- (c) the hydrodynamic recording facilities, with equipment, including computers, for acquiring, recording, and processing data and timing signals, as well as for transmitting and receiving hydrodynamic data and command and monitoring signals between each hydrodynamic recording facility and the command and monitoring facility, and the shock mitigation platforms for installing each hydrodynamic recording facility, and with equipment for distributing electrical analogs of the signals arriving from the instrumentation facility of the Testing Party;
- (d) trigger conditioner devices for generating a timing reference signal from the electrical cables of the Verifying Party, and terminal devices for converting an optical signal into an electrical signal;
- (e) the command and monitoring facility, with equipment, including computers, for generating and recording command and monitoring signals, for transmitting and receiving command and monitoring signals between each hydrodynamic recording facility and the command and monitoring facility, as well as for retrieving, storing, and processing hydrodynamic data;

- (f) electrical cables for transmission of hydrodynamic data from the entrance of each vertical satellite hole or from the entrance of each horizontal emplacement hole to the hydrodynamic recording facility of the Verifying Party;
- (g) electrical cables for the grounding of equipment and for above-ground transmission of electrical power, and electrical and fiber optic cables for above-ground transmission of command and monitoring signals and hydrodynamic data;
- (h) measuring and calibration instrumentation, support equipment, and equipment for installing and positioning sensing elements and cables and transducers;
- (i) equipment specified in paragraph 5 of this Section for confirming the characteristics of emplacement holes and satellite holes; and
- (j) directional survey and magnetic survey equipment and equipment for determining the distance between emplacement holes and satellite holes, and equipment for detecting voids and determining their relative locations and volumes.

4. The list of equipment for the purposes of the use of the seismic yield measurement method at each Designated Seismic Station in accordance with Section VI of this Protocol shall include:

- (a) seismic sensors capable of recording ground movements in three orthogonal directions within the frequency range from 0.1 to 10 hertz;
- (b) equipment for amplifying, filtering, and digitizing the output signals of the seismic sensors;
- (c) equipment for recording seismic data, and cables for interconnecting the equipment described in this paragraph;
- (d) equipment for controlling sensors and recorders and for calibrating equipment;
- (e) means of recording Universal Time Coordinated and referencing the recorded seismic data to it;
- (f) equipment, including computers, to process data, to monitor the quality of the recorded data, as well as to display, store, and copy data; and
- (g) equipment, including that using digital algorithms, for assessing the validity of recorded seismic data.

5. The list of equipment for the purposes of carrying out on-site inspection in accordance with Section VII of this Protocol shall include:

- (a) equipment for obtaining the following logging data: gamma-gamma, gamma, neutron, electrical resistivity, magnetic susceptibility, gravity, television, acoustic, and caliper, as well as equipment for measuring the depth and cross section of emplacement holes and for measuring the volume of voids;
- (b) equipment, including computers, for calibrating logging equipment, for monitoring the quality of the recorded data, as well as for recording, displaying, and copying data from logging equipment;
- (c) equipment for extracting core samples and rock fragments; and
- (d) geologist's field tools and kits, and equipment for the recording of field data.

6. The Testing Party shall have the right, for the purposes of an initial familiarization, to inspect the equipment and every component thereof that the Verifying Party intends to use in carrying out activities related to verification, and thereafter shall have the right to familiarize itself with the equipment and every component thereof that had not previously been provided for this purpose in accordance with this paragraph. For these purposes:

- (a) the equipment subject to familiarization by the Testing Party shall include:
  - (i) a set of equipment for hydrodynamic yield measurements, specified in paragraph 3 of this Section;
  - (ii) a set of equipment for seismic yield measurements, specified in paragraph 4 of this Section;
  - (iii) a set of equipment for on-site inspection, specified in paragraph 5 of this Section; and

- (iv) the equipment specified in paragraphs 1(d), 1(e), 1(f), 1(g), 1(h), 1(i), 1(j), and 1(k) of this Section;
- (b) the Verifying Party shall initiate the familiarization process by notifying the Testing Party no less than 30 days prior to the date on which it intends to deliver equipment to the point of entry. This notification shall include a preliminary inventory of the equipment and the planned date of its delivery;
  - (c) no less than seven days prior to the date of delivery of equipment, the Verifying Party shall provide a complete inventory of such equipment, which shall also specify which equipment, in accordance with paragraph 7(h) of this Section, will be removed from the facilities of the Verifying Party immediately prior to the beginning of the final dry run and immediately prior to the test. At the same time the Verifying Party shall provide instructions on the installation and operation of equipment with functional and technical descriptions and specifications, including electrical diagrams, as well as block diagrams of the system and its components;
  - (d) no more than 45 days following receipt of the equipment, the Testing Party, taking into account the equipment specified for removal in subparagraph (c) of this paragraph, shall specify, in writing, to the Verifying Party:
    - (i) the equipment approved by it for use by Designated Personnel in accordance with the information provided in accordance with subparagraph (c) of this paragraph; and
    - (ii) the characteristics of any equipment component it finds unacceptable because it is inconsistent with its non-intrusiveness, containment, safety, or security requirements;
- (e) no more than 50 days following its initial delivery to the point of entry, equipment shall be returned, in the same condition as that in which it was received, to the Verifying Party at the point of entry; and
  - (f) following receipt of the written evaluation provided by the Testing Party in accordance with subparagraph (d)(ii) of this paragraph, the Verifying Party may deliver to the Testing Party, for familiarization in accordance with procedures specified in subparagraphs (b) and (c) of this paragraph, modified or replacement equipment to eliminate the unacceptable characteristics specified by the Testing Party, after which the procedures specified in subparagraphs (d) and (e) of this paragraph shall be followed with respect to the modified or replacement equipment.

7. The following procedures shall apply to equipment for use of the hydrodynamic yield measurement method:

- (a) with the exception of that equipment that the Verifying Party intends to use from the equipment stored in accordance with subparagraph (j) of this paragraph, no less than 60 days prior to the planned date of the beginning of emplacement of sensing elements and cables or the planned date of the beginning of emplacement of explosives, whichever occurs earlier, unless the Parties otherwise agree, the Verifying Party shall deliver in sealed containers to the point of entry, at its option, either one or two sets of all or part of the equipment specified in paragraphs 1(d), 1(e), 1(f), 1(g), 1(h), 1(i), 1(k), 3(i), and 3(j) of this Section;
  - (b) with the exception of that equipment that the Verifying Party intends to use from the equipment stored in accordance with subparagraph (j) of this paragraph, no less than 45 days prior to the planned date of the beginning of emplacement of sensing elements and cables, unless the Parties otherwise agree, the Verifying Party shall deliver in sealed containers to the point of entry two identical sets of the equipment specified in paragraphs 3(a), 3(b), 3(c), 3(d), and 3(e) of this Section, and, at its option, either one or two sets of the equipment specified in paragraphs 1(j), 3(f), 3(g), and 3(h) of this Section, and, if it has not been delivered in accordance with subparagraph (a) of this paragraph, the equipment specified in paragraphs 1(d), 1(e), 1(f), 1(g), 1(h), 1(i), and 1(k) of this Section;

(c) these sets of equipment shall have the same components with the same functional and technical descriptions and specifications as the equipment approved by the Testing Party in accordance with paragraph 6(d)(i) of this Section;

(d) no less than seven days prior to the date of delivery of equipment to the point of entry, the Verifying Party shall provide a complete inventory of this equipment, specifying which equipment, in accordance with subparagraph (h) of this paragraph, will be removed from the facilities of the Verifying Party immediately prior to the beginning of the final dry run and immediately prior to the test;

(e) if the Verifying Party provides two identical sets of equipment:

(i) the Testing Party shall choose, at the point of entry, one of the two identical sets of each type of equipment for use by Designated Personnel, with the exception of the equipment specified in paragraphs 3(a) and 3(b) of this Section, and shall affix its own seals to the sealed containers in which that set of equipment arrived. The set of equipment not chosen by the Testing Party for use by Designated Personnel shall be subject to inspection by the Testing Party. Seals of the Verifying Party shall be removed from equipment chosen by the Testing Party for inspection, in the presence of personnel of both Parties, and thereafter this equipment shall be retained for inspection by the Testing Party without the presence of Designated Personnel for a period of no more than 30 days, after which time it shall be returned, in the same condition as that in which it was received, to the Verifying Party at the point of entry;

(ii) with respect to the equipment specified in paragraphs 3(a) and 3(b) of this Section, the Testing Party, under observation of Designated Personnel, shall remove the seals of the Verifying Party, combine the two sets of equipment, and randomly redistribute the items of each type of such equipment in order to produce two new identical sets. The Testing Party shall choose one of these new identical sets for use by Designated Personnel, and both Parties shall affix their own seals to the containers of that set. The set of equipment not chosen by the Testing Party for use by Designated Personnel shall be subject to inspection by the Testing Party in accordance with procedures specified in subparagraph (e)(iii) of this paragraph;

(iii) if the Verifying Party has delivered the equipment specified in paragraphs 3(a) and 3(b) of this Section with individual gas-blocking devices installed in the cables, Designated Personnel, under observation of personnel of the Testing Party, shall cut each cable at points three meters on either side of each gas-blocking device and shall place these gas-blocking devices and their attached cable segments in separate containers. If the Verifying Party delivered this equipment without individual gas-blocking devices installed, Designated Personnel, under observation of personnel of the Testing Party, shall cut a three-meter segment from each end of each cable and shall place these segments in separate containers. Personnel of each Party, under observation of personnel of the other Party, shall seal these separate containers of cable segments or gas-blocking devices with cable segments. The remainder of this equipment shall be retained for inspection by the Testing Party in accordance with subparagraph (e)(i) of this paragraph, except that during inspection of this equipment the Testing Party may remove up to 150 meters of cable from the set chosen for inspection, in no more segments than twice the number of cables in that set; the set of equipment not chosen by the Testing Party for use by Designated Personnel shall be subject to inspection by the Testing Party;



(iv) the Testing Party shall ensure protection of the equipment chosen by it for use by Designated Personnel and the sealed containers specified in subparagraph (e)(iii) of this paragraph while they are in its territory, and shall transport this equipment to the test site in such a manner as to ensure that it is delivered to Designated Personnel in the same condition as that in which it was received by the Testing Party. Prior to shipment to the test site, and from the time of its arrival at the test site until the time of its transfer to Designated Personnel, this equipment shall be kept sealed, in storage under conditions agreed upon by the Parties;

(v) personnel of the Testing Party shall consult with Designated Personnel regarding plans and schedule of shipment of the equipment no less than 48 hours prior to its shipment. Designated Personnel shall have the right to verify the integrity of their seals, to observe their equipment, and to accompany it from the point of entry to the test site. The equipment specified in subparagraph (a) of this paragraph shall be delivered to Designated Personnel for use at the test site no less than 25 days prior to the planned date of the beginning of emplacement of explosives or the planned date of the beginning of emplacement of sensing elements and cables, whichever occurs earlier, unless the Parties otherwise agree. The equipment specified in subparagraph (b) of this paragraph shall be delivered to Designated Personnel at the test site for use no less than 10 days prior to the planned date of the beginning of emplacement of sensing elements and cables, unless the Parties otherwise agree. Personnel of each Party shall remove their seals from the equipment under observation of personnel of the other Party. Prior to removing their seals, personnel of each Party shall have the right to verify the integrity of those seals, under observation of personnel of the other Party;

(vi) seals affixed to the equipment specified in paragraphs 3(a), 3(b), and 3(d) of this Section shall not be removed prior to either the conduct of pressure tests and non-destructive inspections, in accordance with subparagraphs e(vii) and (e)(viii) of this paragraph, or preparation for installation of such equipment, at which time personnel of each Party shall remove their seals, under observation of personnel of the other Party. Prior to removing their seals, personnel of each Party shall have the right to verify the integrity of those seals, under observation of personnel of the other Party. Thereafter, personnel of the Testing Party shall have the right to observe all activities of Designated Personnel related to this equipment;

(vii) the Testing Party shall have the right to conduct pressure tests on the portions of cables with individual gas-blocking devices specified in subparagraph (e)(iii) of this paragraph, in accordance with its technical operations and practices and under observation of Designated Personnel, to ensure that the individual gas-blocking devices meet the containment requirements of the Testing Party. These pressure tests shall be conducted at a time specified by the Testing Party, at which time personnel of each Party shall verify the integrity of their seals on the containers specified in subparagraph (e)(iii) of this paragraph and shall remove their seals, under observation of personnel of the other Party. The Testing Party shall also have the right to conduct non-destructive inspections, under observation of Designated Personnel, on the set of cables chosen for use, to ensure that the cables chosen for use are identical in construction to those chosen for inspection. Such non-destructive inspections shall be carried out at a time specified by the Testing Party. All tests and non-destructive inspections

related to the containment requirements of the Testing Party shall be completed, and the results communicated to the Designated Personnel Team Leader at the test site, no less than 10 days prior to the planned date for the beginning of emplacement of sensing elements and cables. If all of the individual gas-blocking devices removed from cables in the set chosen for inspection, in accordance with subparagraph (e)(iii) of this paragraph, successfully meet the containment requirements, and if cables chosen for use are found to be identical in construction to those chosen for inspection, then the set chosen for use shall be sealed by the seals of both Parties, which shall not be removed prior to preparation for installation of such equipment. Following the pressure tests, the Testing Party shall have the right to retain the individual gas-blocking devices with their attached cable segments from the set chosen for inspection;

(viii) if the Verifying Party delivered the equipment specified in paragraphs 3(a) and 3(b) of this Section without individual gas-blocking devices installed in the cables, the Testing Party shall have the right to conduct pressure tests, in accordance with its technical operations and practices, to ensure that the gas-blocking properties of these cables meet the containment requirements of the Testing Party. These tests shall be performed under observation of Designated Personnel on the segments of cables specified in subparagraph (e)(iii) of this paragraph as well as on a three-meter segment of each cable of the set chosen for use, removed by Designated Personnel, under observation of personnel of the Testing Party, from the end of the cable that will extend to the ground surface. These pressure tests shall be conducted at a time specified by the Testing Party, at which time personnel of each Party shall verify the integrity of their seals on the containers specified in subparagraph (e)(iii) of this paragraph, as well as on the containers with the set of equipment chosen for use, specified in paragraphs 3(a) and 3(b), and shall remove their seals under observation of personnel of the other Party. All tests related to the containment requirements of the Testing Party shall be completed, and the results communicated to the Designated Personnel Team Leader at the test site, no less than 10 days prior to the planned date for the beginning of emplacement of sensing elements and cables. If all of the cable segments removed from the set chosen for use and the set chosen for inspection meet the containment requirements of the Testing Party, then the set chosen for use shall be sealed by the seals of both Parties, which shall not be removed prior to preparation for installation of such equipment and its use in hydrodynamic yield measurements; and

(ix) if, within one day following the completion of testing and non-destructive inspections specified in subparagraphs (e)(vii) and (e)(viii) of this paragraph, the Verifying Party so requests, the Testing Party shall provide cables that meet its containment requirements. The Testing Party shall deliver these cables to Designated Personnel at the test site no more than two days following the request of the Verifying Party but no less than seven days prior to the planned date for the beginning of emplacement of sensing elements and cables, unless the Parties otherwise agree;

(f) if the Verifying Party provides only one set of equipment:

(i) upon arrival of the equipment at the point of entry, the seals of the Verifying Party shall be removed from this equipment in the presence of personnel of both Parties, after which the Testing Party shall have the right to inspect this equipment for no more than 30 days, without the presence of Designated Personnel;

(ii) upon completion of the inspection, the Testing Party shall transport all approved equipment to the test site and deliver it, in the same condition as that in which it was received, to Designated Personnel. The equipment specified in subparagraph (a) of this paragraph shall be delivered to Designated Personnel no less than 25 days prior to the planned date of the beginning of emplacement of explosives or the planned date of the beginning of emplacement of sensing elements and cables, whichever occurs earlier, unless the Parties otherwise agree. The equipment specified in subparagraph (b) of this paragraph shall be delivered to Designated Personnel at the test site no less than 10 days prior to the planned date of the beginning of emplacement of sensing elements and cables, unless the Parties otherwise agree; and

(iii) within five days following delivery of equipment to Designated Personnel, the Designated Personnel Team Leader shall certify, in writing, to the Representative of the Testing Party that the equipment delivered to the test site is in working condition or, in the event of damage to the equipment, shall report such damage in writing;

(g) upon completion of inspection of the equipment, in accordance with subparagraphs (e)(i) and (f) (i) of this paragraph, the Testing Party shall inform the Verifying Party, in writing, of any equipment that does not conform to that approved previously in accordance with paragraph 6(d)(i) of this Section and shall specify the non-conforming characteristics of any such equipment or component thereof. Prior to shipment to the test site, in the case of equipment provided in one set, or at the time of delivery to Designated Personnel at the test site of the set of equipment chosen for use, in the case of equipment provided in two sets, the equipment that does not conform to that approved previously shall be removed by Designated Personnel under observation of personnel of the Testing Party and placed under seals of both Parties in storage at a location chosen by the Testing Party. Any such equipment shall be returned by the Testing Party to Designated Personnel at the point of entry following completion of the activity related to verification for which it was originally provided. Except as otherwise provided in this Protocol, equipment approved by the Testing Party shall remain under the exclusive control of Designated Personnel from the time of its delivery to Designated Personnel at the test site until it is transferred to the Testing Party in accordance with subparagraph (i) of this paragraph;

(h) immediately prior to the beginning of the final dry run, Designated Personnel, under observation of personnel of the Testing Party, shall remove from each hydrodynamic recording facility and the command and monitoring facility all items specified in accordance with paragraph 6(c) of this Section for removal at that time. These items shall be placed under the seals of both Parties and stored at a location chosen by the Testing Party. Upon departure of personnel of both Parties from each hydrodynamic recording facility immediately prior to the test, all remaining maintenance and support equipment and spare parts shall be removed by Designated Personnel, unless the Parties otherwise agree;

(i) personnel of the Testing Party shall have the right to inspect equipment after it has been used for carrying out activities related to hydrodynamic yield measurements, for a period of 30 days, without the presence of Designated Personnel. For these purposes:

(i) the equipment used for carrying out activities specified in paragraphs 4(g), 5(c), and 5(f) or 5(g) or 5(h), and 6(b), 6(f), 7(c), and 7(f) or 7(g) or 7(h) of Section V of this Protocol shall be transferred to the Testing Party upon completion of all these activities, unless the Parties agree that equipment for any specific activity may be transferred upon completion of that activity;

(ii) all other equipment, except that specified in paragraphs 1(e), 1(g), 1(h), 1(i), and 1(k) of this Section, shall be transferred to the Testing Party upon

completion of all activities specified in paragraphs 9(m) and 14(b) of Section V of this Protocol;

(iii) equipment specified in paragraphs 1(e), 1(g), 1(h), 1(i), and 1(k) of this Section shall be transferred to the Testing Party upon completion of all activities of Designated Personnel specified in Section V of this Protocol; and

(iv) during inspection of equipment specified in paragraphs 3(f) and 3(g) of this Section, after it has been used for carrying out activities related to hydrodynamic yield measurements, the Testing Party shall have the right to remove and retain no more than 150 meters of those cables, in no more segments than twice the number of cables in each set, with the exception of the fiber optic cables and the electrical cables for above-ground transmission of electrical power;

(j) the Verifying Party shall have the right to store for subsequent use part or all of its equipment in the territory of the Testing Party. Storage shall be under conditions agreed upon by the Parties, at a location chosen by the Testing Party and under its protection;

(k) with respect to inventory and shipment or storage of this equipment, the following procedures, at the option of the Verifying Party, shall be applied:

(i) upon transfer of equipment to the Testing Party for inspection, in accordance with subparagraph (i) of this paragraph, Designated Personnel shall provide complete inventories of equipment to be stored and equipment to be shipped to their territory. These inventories shall be signed by the Designated Personnel Team Leader and the Representative of the Testing Party, each of whom shall retain a copy of the inventories. Within five days following completion of inspection of equipment to be shipped, the Testing Party shall return this equipment to Designated Personnel at the point of entry, in the same condition as that in which it was received. Elimination of information stored in memories shall not be deemed damage to the equipment; or

(ii) within five days following completion of inspection of equipment in accordance with subparagraph (i) of this paragraph, the Testing Party shall return this equipment to Designated Personnel at a location chosen by the Testing Party, in the same condition as that in which it was received. Elimination of information stored in memories shall not be deemed damage to the equipment. Designated Personnel shall examine, inventory, and pack their equipment in containers. Personnel of the Testing Party shall have the right to observe these activities. Within five days following receipt of their equipment, Designated Personnel shall transfer to the Testing Party the packed containers, along with inventories of the equipment to be stored and the equipment to be shipped. These inventories shall be signed by the Designated Personnel Team Leader and the Representative of the Testing Party, each of whom shall retain a copy of the inventories. Within 10 days following receipt of the equipment to be shipped, the Testing Party shall deliver it to the point of entry; and

(l) if stored equipment is to be used for activities related to verification of a subsequent test, it shall be subject to further inspection only after such use. The equipment specified in subparagraph (a) of this paragraph shall be delivered, in the same condition as that in which it was received, to Designated Personnel for use at the test site no less than 25 days prior to the planned date of the beginning of emplacement of explosives or the planned date of the beginning of emplacement of sensing elements and cables, whichever occurs earlier, unless the Parties otherwise agree. The equipment specified in subparagraph (b) of this paragraph shall be delivered, in the same condition as that in which it was received, to Designated Personnel at the test site no later than 10 days prior

to the planned date of the beginning of emplacement of sensing elements and cables, unless the Parties otherwise agree.

8. The following procedures shall apply to equipment for use of the seismic yield measurement method:

(a) with the exception of that equipment that the Verifying Party intends to use from the equipment stored in accordance with subparagraph (h) of this paragraph, no less than 45 days prior to the planned date of the test, unless the Parties otherwise agree, the Verifying Party shall deliver in sealed containers to the point of entry, at its option, either one or two sets of all or part of the equipment specified in paragraphs 1(d), 1(e), 1(f), 1(g), 1(h), 1(i), and 4 of this Section;

(b) these sets of equipment shall have the same components with the same functional and technical descriptions and specifications as the equipment approved by the Testing Party in accordance with paragraph 6(d)(i) of this Section;

(c) no less than seven days prior to the date of delivery of equipment to the point of entry, the Verifying Party shall provide a complete inventory of this equipment;

(d) if the Verifying Party provides two identical sets of equipment:

(i) the Testing Party shall choose, at the point of entry, one of the two identical sets of each type of equipment for use by Designated Personnel, and shall affix its own seals to the sealed containers in which that set of equipment arrived;

(ii) the Testing Party shall ensure protection of this equipment while it is in its territory, and shall transport this equipment to the Designated Seismic Stations in such a manner as to ensure that it is delivered to Designated Personnel in the same condition as that in which it was received by the Testing Party. Prior to shipment to the Designated Seismic Stations, and from the time of its arrival at the Designated Seismic Stations until the time of its transfer to Designated Personnel, the set of equipment chosen by the Testing Party for use by Designated Personnel shall be kept sealed, in storage under conditions agreed upon by the Parties;

(iii) personnel of the Testing Party shall consult with Designated Personnel regarding plans and schedule of shipment of the equipment no less than 48 hours prior to its shipment. Designated Personnel shall have the right to verify the integrity of their seals, to observe their equipment, and to accompany it from the point of entry to the Designated Seismic Stations. This equipment shall be delivered to Designated Personnel at Designated Seismic Stations for installation and use no less than 10 days prior to the planned date of the test. Personnel of each Party shall remove their seals from the equipment under observation of personnel of the other Party. Prior to removing their seals, personnel of each Party shall have the right to verify the integrity of those seals, under observation of personnel of the other Party; and

(iv) seals of the Verifying Party shall be removed from equipment chosen by the Testing Party for inspection, in the presence of personnel of both Parties, and thereafter this equipment shall be retained for inspection by the Testing Party without the presence of Designated Personnel for a period of no more than 30 days, after which time it shall be returned, in the same condition as that in which it was received, to the Verifying Party at the point of entry;

(e) if the Verifying Party provides only one set of equipment:

(i) upon arrival of the equipment at the point of entry, the seals of the Verifying Party shall be removed from this equipment in the presence of personnel of both Parties, after which the Testing Party shall have the right to inspect this equipment for no more than 30 days, without the presence of Designated Personnel;



(ii) upon completion of the inspection, the Testing Party shall transport all approved equipment to the Designated Seismic Stations and deliver it, in the same condition as that in which it was received, to Designated Personnel no less than 10 days prior to the planned date of the test, unless the Parties otherwise agree; and

(iii) within three days following delivery of the equipment to Designated Personnel, the Designated Personnel Team Leader shall certify in writing to the Representative of the Testing Party that the equipment delivered to the Designated Seismic Station is in working condition or, in the event of damage to the equipment, shall report such damage in writing;

(f) upon completion of inspection of the equipment, in accordance with subparagraphs (d)(iv) and (e)(i) of this paragraph, the Testing Party shall inform the Verifying Party, in writing, of any equipment that does not conform to that approved previously in accordance with paragraph 6(d)(i) of this Section and shall specify the non-conforming characteristics of any such equipment or component thereof. Prior to shipment to the Designated Seismic Station, in the case of equipment provided in one set, or at the time of delivery to Designated Personnel at the Designated Seismic Station of the set of equipment chosen for use, in the case of equipment provided in two sets, the equipment that does not conform to that approved previously shall be removed by Designated Personnel under observation of personnel of the Testing Party and placed under seals of both Parties in storage at a location chosen by the Testing Party. Any such equipment shall be returned by the Testing Party to Designated Personnel at the point of entry following completion of the activity related to verification for which it was originally provided. Except as otherwise provided in this Protocol, equipment approved by the Testing Party shall remain under the exclusive control of Designated Personnel from the time of its delivery to Designated Personnel at a Designated Seismic Station until it is transferred to the Testing Party in accordance with subparagraphs (g) and (j) of this paragraph;

(g) personnel of the Testing Party shall have the right to inspect equipment after it has been used for activities related to seismic yield measurements for a period of 30 days, without the presence of Designated Personnel. If the Testing Party decides to inspect that equipment, it shall be transferred to the Testing Party upon completion of activities specified in Section VI of this Protocol;

(h) the Verifying Party shall have the right to store for subsequent use part or all of its equipment in the territory of the Testing Party. Storage shall be under conditions agreed upon by the Parties, at a location chosen by the Testing Party and under its protection;

(i) if the Testing Party inspects the equipment, with respect to inventory and shipment or storage of this equipment, the following procedures, at the option of the Verifying Party, shall be applied:

(i) upon transfer of equipment to the Testing Party for inspection in accordance with subparagraph (g) of this paragraph, Designated Personnel shall provide complete inventories of equipment to be stored and equipment to be shipped to their territory. These inventories shall be signed by the Designated Personnel Team Leader and the Representative of the Testing Party, each of whom shall retain a copy of the inventories. Within five days following completion of inspection of equipment to be shipped, the Testing Party shall return this equipment to Designated Personnel at the point of entry, in the same condition as that in which it was received. Elimination of information stored in memories shall not be deemed damage to the equipment; or

(ii) within five days following completion of inspection of equipment in accordance with subparagraph (g) of this paragraph, the Testing Party shall return this equipment to Designated Personnel at a location chosen by the Testing Party in the same condition as that in which it was received.

Elimination of information stored in memories shall not be deemed damage to the equipment. Designated Personnel shall examine, inventory, and pack their equipment in containers. Personnel of the Testing Party shall have the right to observe these activities. Within five days following receipt of their equipment, Designated Personnel shall transfer to the Testing Party the packed containers, along with inventories of the equipment to be stored and the equipment to be shipped. These inventories shall be signed by the Designated Personnel Team Leader and the Representative of the Testing Party, each of whom shall retain a copy of the inventories. Within 10 days following receipt of equipment to be shipped, the Testing Party shall deliver it to the point of entry;

(j) if the Testing Party chooses not to inspect the equipment upon completion of activities related to seismic yield measurements, Designated Personnel shall prepare the equipment for storage or shipment to their territory prior to departure from the Designated Seismic Station and, upon transfer of equipment to the Testing Party, shall provide complete inventories of equipment to be stored and equipment to be shipped. These inventories shall be signed by the Designated Personnel Team Leader and the Representative of the Testing Party, each of whom shall retain a copy of the inventories. Equipment to be shipped shall be returned to the Verifying Party at the point of entry within 10 days following departure of Designated Personnel from the Designated Seismic Station. Equipment to be stored shall be prepared for storage, in accordance with agreed procedures for the conditions of storage chosen by the Testing Party; and

(k) if stored equipment is to be used for activities related to verification of a subsequent test, it shall be subject to further inspection only after such use. This equipment shall be delivered, in the same condition as that in which it was received, to Designated Personnel for use at the Designated Seismic Stations no later than 10 days prior to the planned date of the test, unless the Parties otherwise agree.

9. The following procedures shall apply to equipment for carrying out on-site inspection:

(a) with the exception of that equipment that the Verifying Party intends to use from the equipment stored in accordance with subparagraph (h) of this paragraph, no less than 55 days prior to the planned date of the beginning of emplacement of explosives, unless the Parties otherwise agree, the Verifying Party shall deliver in sealed containers to the point of entry, at its option, either one or two sets of all or part of the equipment specified in paragraphs 1(d), 1(e), 1(f), 1(g), 1(h), 1(i), 1(k), and 5 of this Section;

(b) these sets of equipment shall have the same components with the same functional and technical descriptions and specifications as the equipment approved by the Testing Party in accordance with paragraph 6(d)(i) of this Section;

(c) no less than seven days prior to the date of delivery of equipment to the point of entry, the Verifying Party shall provide a complete inventory of this equipment;

(d) if the Verifying Party provides two identical sets of equipment:

(i) the Testing Party shall choose, at the point of entry, one of the two identical sets of each type of equipment for use by Designated Personnel, and shall affix its own seals to the sealed containers in which that set of equipment arrived;

(ii) the Testing Party shall ensure protection of this equipment while it is in its territory, and shall transport this equipment to the test site in such a manner as to ensure that it is delivered to Designated Personnel in the same condition as that in which it was received by the Testing Party. Prior to shipment to the test site, and from the time of its arrival at the test site until the time of its transfer to Designated Personnel, the set of equipment chosen by the Testing Party for use by Designated Personnel shall be kept sealed, in storage under conditions agreed upon by the Parties;

(iii) personnel of the Testing Party shall consult with Designated Personnel regarding plans and schedule of shipment of the equipment no less than 48 hours prior to its shipment. Designated Personnel shall have the right to verify the integrity of their seals, to observe their equipment, and to accompany it from the point of entry to the test site. This equipment shall be delivered to Designated Personnel at the test site no less than 20 days before the planned date of the beginning of emplacement of explosives, unless the Parties otherwise agree. Personnel of each Party shall remove their seals from the equipment under observation of personnel of the other Party. Prior to removing their seals, personnel of each Party shall have the right to verify the integrity of those seals, under observation of personnel of the other Party; and

(iv) seals of the Verifying Party shall be removed from equipment chosen by the Testing Party for inspection, in the presence of personnel of both Parties, and thereafter this equipment shall be retained for inspection by the Testing Party without the presence of Designated Personnel for a period of no more than 30 days, after which time it shall be returned, in the same condition as that in which it was received, to the Verifying Party at the point of entry;

(e) if the Verifying Party provides only one set of equipment:

(i) upon arrival of the equipment at the point of entry, the seals of the Verifying Party shall be removed from this equipment in the presence of personnel of both Parties, after which the Testing Party shall have the right to inspect this equipment for no more than 30 days, without the presence of Designated Personnel;

(ii) upon completion of the inspection, the Testing Party shall transport all approved equipment to the test site and deliver it, in the same condition as that in which it was received, to Designated Personnel no less than 20 days prior to the planned date of the beginning of emplacement of explosives, unless the Parties otherwise agree; and

(iii) within five days following delivery of equipment to Designated Personnel, the Designated Personnel Team Leader shall certify, in writing, to the Representative of the Testing Party that the equipment delivered to the test site is in working condition or, in the event of damage to the equipment, shall report such damage in writing;

(f) upon completion of inspection of the equipment in accordance with subparagraphs (d)(iv) and (e)(i) of this paragraph, the Testing Party shall inform the Verifying Party, in writing, of any equipment that does not conform to that approved previously in accordance with paragraph 6(d)(i) of this Section and shall specify the non-conforming characteristics of any such equipment or component thereof. Prior to shipment to the test site, in the case of equipment provided in one set, or at the time of delivery to Designated Personnel at the test site of the set of equipment chosen for use, in the case of equipment provided in two sets, the equipment that does not conform to that approved previously shall be removed by Designated Personnel under observation of personnel of the Testing Party and placed under seals of both Parties in storage at a location chosen by the Testing Party. Any such equipment shall be returned by the Testing Party to Designated Personnel at the point of entry, following completion of the activity related to verification for which it was originally provided. Except as otherwise provided in this Protocol, equipment approved by the Testing Party shall remain under the exclusive control of Designated Personnel from the time of its delivery to Designated Personnel at the test site until it is transferred to the Testing Party in accordance with subparagraph (g) of this paragraph;

(g) personnel of the Testing Party shall have the right to inspect equipment after it has been used for carrying out activities related to on-site inspection, for a period of 30 days, without the presence of Designated Personnel. For these purposes:

- (i) the equipment used for carrying out activities specified in paragraphs 1(b), 1(c), 1(e), 1(f), 1(g), and 1(h) of Section VII of this Protocol shall be transferred to the Testing Party upon completion of all these activities, unless the Parties agree that equipment for any specific activity may be transferred upon completion of that activity; and
- (ii) all other equipment shall be transferred to the Testing Party upon completion of all activities of Designated Personnel specified in Section VII of this Protocol;

(h) the Verifying Party shall have the right to store for subsequent use part or all of its equipment in the territory of the Testing Party. Storage shall be under conditions agreed by the Parties, at a location chosen by the Testing Party and under its protection;

(i) with respect to inventory and shipment or storage of this equipment, the following procedures, at the option of the Verifying Party, shall be applied:

(i) upon transfer of equipment to the Testing Party for inspection in accordance with subparagraph (g) of this paragraph, Designated Personnel shall provide complete inventories of equipment to be stored and equipment to be shipped to their territory. These inventories shall be signed by the Designated Personnel Team Leader and the Representative of the Testing Party, each of whom shall retain a copy of the inventories. Within five days following completion of inspection of the equipment to be shipped, the Testing Party shall return this equipment to Designated Personnel at the point of entry, in the same condition as that in which it was received.

Elimination of information stored in memories shall not be deemed damage to the equipment; or

(ii) within five days following completion of inspection of equipment in accordance with subparagraph (g) of this paragraph, the Testing Party shall return this equipment to Designated Personnel at a location chosen by the Testing Party, in the same condition as that in which it was received.

Elimination of information stored in memories shall not be deemed damage to the equipment. Designated Personnel shall examine, inventory, and pack their equipment in containers. Personnel of the Testing Party shall have the right to observe these activities. Within five days following receipt of their equipment, Designated Personnel shall transfer to the Testing Party the packed containers, along with inventories of the equipment to be stored and the equipment to be shipped. These inventories shall be signed by the Designated Personnel Team Leader and the Representative of the Testing Party, each of whom shall retain a copy of the inventories. Within 10 days following receipt of the equipment to be shipped, the Testing Party shall deliver it to the point of entry; and

(j) if stored equipment is to be used for activities related to verification of a subsequent test, it shall be subject to further inspection only after such use. This equipment shall be delivered, in the same condition as that in which it was received, to Designated Personnel at the test site no less than 20 days prior to the planned date of the beginning of emplacement of explosives for that test, unless the Parties otherwise agree.

#### **SECTION IX. DESIGNATED PERSONNEL AND TRANSPORT PERSONNEL**

1. No later than 10 days following entry into force of the Treaty each Party shall provide the other Party with a list of its proposed Designated Personnel who will carry out activities in accordance with this Protocol and a list of its proposed Transport Personnel who will provide transportation for these Designated Personnel, their baggage, and equipment of the Verifying Party. These lists shall contain name, date of birth, and sex of each individual of its proposed Designated Personnel and Transport Personnel. The list of Designated Personnel shall at no time include more than 300 individuals, and the list of Transport Personnel shall at no time include more than 200 individuals.



2. Each Party shall review the list of Designated Personnel and the list of Transport Personnel proposed by the other Party. If the Party reviewing a list determines that an individual included thereon is acceptable to it, it shall so inform the Party providing the list within 20 days following receipt of the list, and such an individual shall be deemed accepted. If the Party reviewing a list determines that an individual included thereon is not acceptable to it, it shall so inform the Party providing the list of its objection within 20 days following receipt of the list, and such an individual shall be deemed unaccepted and shall be deleted from the list.

3. Each Party may propose the addition or substitution of individuals on its list of Designated Personnel or its list of Transport Personnel at any time, who shall be designated in the same manner as provided in paragraph 2 of this Section with regard to the initial lists. Annually, no more than 100 individuals from the list of Designated Personnel shall be subject to substitution. This limitation shall not apply to the replacement of individuals due to permanent physical incapacity or death, or to deletion of an individual from the list of Designated Personnel in accordance with paragraph 5 of this Section. Replacement of an individual due to permanent physical incapacity, death or deletion from the list shall be accomplished in the same manner as provided in paragraph 2 of this Section.

4. Following receipt of the initial list of Designated Personnel or the initial list of Transport Personnel or of subsequent changes thereto, the Party receiving such information shall prepare for the issuance of such visas and other documents as may be required to ensure that each individual on the list of Designated Personnel or the list of Transport Personnel who has been accepted may enter and remain in its territory for the purpose of carrying out activities in accordance with this Protocol. Such visas and documents shall be provided by the Testing Party only to the individuals whose names are included in the notification provided by the Verifying Party, in accordance with paragraphs 2 and 3 of Section X of this Protocol, upon receipt of such notification. Such visas and documents shall be valid for multiple entry throughout the period required for Designated Personnel to carry out their activities related to verification of a specific test.

5. If a Party determines that an individual included on the list of Designated Personnel or the list of Transport Personnel of the other Party has violated the provisions of this Protocol or has ever committed a criminal offense in its territory, or has ever been sentenced for committing a criminal offense, or has ever been expelled from its territory, the Party making such a determination shall notify the other Party of its objection to the continued inclusion of this individual on the list. If at that time this individual is present in the territory of the Party raising the objection, then the other Party shall immediately recall this individual from the territory of the Party raising this objection and immediately thereafter delete that individual from the list of Designated Personnel or from the list of Transport Personnel.

6. Designated Personnel with their personal baggage and equipment of the Verifying Party shall be permitted to enter the territory of the Testing Party at the designated point of entry, to remain in that territory, and to exit that territory through the designated point of entry.

7. Designated Personnel and Transport Personnel shall be accorded the following privileges and immunities for the entire period they are in the territory of the Testing Party and thereafter with respect to acts previously performed in the exercise of their official functions as Designated Personnel or Transport Personnel:

(a) Designated Personnel and Transport Personnel shall be accorded the inviolability enjoyed by diplomatic agents pursuant to Article 29 of the Vienna Convention on Diplomatic Relations of April 18, 1961;

(b) living and working quarters occupied by Designated Personnel and Transport Personnel carrying out activities in accordance with this Protocol shall be accorded the inviolability and protection accorded the quarters of missions and diplomatic agents pursuant to Articles 22 and 30 of the Vienna Convention on Diplomatic Relations;

(c) archives, documents, papers, and correspondence of Designated Personnel and Transport Personnel shall enjoy the inviolability accorded the archives, documents, papers, and correspondence of missions and diplomatic agents pursuant to Articles 24



and 30 of the Vienna Convention on Diplomatic Relations. In addition, the aircraft or other transport vehicles of the Verifying Party shall be inviolable;

(d) Designated Personnel and Transport Personnel shall be accorded the immunities accorded diplomatic agents pursuant to paragraphs 1, 2, and 3 of Article 31 of the Vienna Convention on Diplomatic Relations. Immunity from jurisdiction of Designated Personnel or Transport Personnel may be waived by the Verifying Party in those cases in which it is of the opinion that immunity would impede the course of justice, and it can be waived without prejudice to the implementation of the provisions of this Protocol. Waiver must always be express;

(e) Designated Personnel and Transport Personnel carrying out their activities in accordance with this Protocol shall be accorded the exemption from dues and taxes accorded diplomatic agents pursuant to Article 34 of the Vienna Convention on Diplomatic Relations;

(f) living and working quarters occupied by Designated Personnel and Transport Personnel carrying out their activities in accordance with this Protocol shall be accorded the exemption from dues and taxes accorded mission premises pursuant to Article 23 of the Vienna Convention on Diplomatic Relations; and

(g) Designated Personnel and Transport Personnel shall be permitted to bring into the territory of the Testing Party, without payment of any customs duties or related charges, articles for their personal use, with the exception of articles the import or export of which is prohibited by law or controlled by quarantine regulations.

8. Designated Personnel and Transport Personnel shall not engage in any professional or commercial activity for personal profit in the territory of the Testing Party.

9. Without prejudice to their privileges and immunities, Designated Personnel and Transport Personnel shall be obliged to respect the laws and regulations of the Testing Party and shall be obliged not to interfere in the internal affairs of that Party.

10. If the Testing Party considers that there has been an abuse of privileges and immunities specified in paragraph 7 of this Section, consultations shall be held between the Parties to determine whether such an abuse has occurred and, if so determined, to prevent a repetition of such an abuse.

## **SECTION X. ENTRY, TRANSPORT, FOOD, LODGING, AND PROVISION OF SERVICES FOR DESIGNATED PERSONNEL AND TRANSPORT PERSONNEL**

1. The Testing Party shall ensure Designated Personnel and Transport Personnel access to its territory for the purposes of carrying out activities related to verification in accordance with this Protocol, and shall provide these personnel with such other assistance as may be necessary to enable them to carry out these activities. Designated Personnel shall have the right to be present at the test site and at Designated Seismic Stations in the territory of the Testing Party to carry out activities related to verification in accordance with this Protocol at such times and for such periods as required to carry out these activities. The specific times and periods for carrying out such activities shall be specified in the coordinated schedule.

2. No less than 20 days prior to the planned date of arrival of its Designated Personnel at the point of entry for participation in activities related to verification of a specific test, the Verifying Party shall provide the Testing Party with:

(a) a list of the names of the Designated Personnel with their passports and documentation, who will carry out activities related to verification of a specific test;

(b) the names of the Designated Personnel Team Leader or Leaders and the names of Designated Personnel who will escort equipment of the Verifying Party to the test site or each Designated Seismic Station;

(c) confirmation of the point of entry to be used;

(d) the planned date and the estimated time of arrival of these Designated Personnel at the point of entry; and

(e) the mode of transport to be used.

No more than 15 days following receipt of the list and passports and documentation specified in subparagraph (a) of this paragraph, the Testing Party shall return those passports to the Verifying Party with the visas and all necessary documents specified in paragraph 4 of Section IX of this Protocol.

3. No less than 20 days prior to the planned date of arrival of Transport Personnel at the point of entry, the Verifying Party shall provide the Testing Party with the number of Transport Personnel. No less than three days prior to the planned date of arrival of Transport Personnel, the Verifying Party shall provide the Testing Party with a list of the names of those Transport Personnel with their passports and documentation. No less than one day prior to the planned date of arrival of Transport Personnel, the Testing Party shall return those passports to the Verifying Party with the visas and all necessary documents specified in paragraph 4 of Section IX of this Protocol.

4. The number of Designated Personnel present at a test site or Designated Seismic Station to carry out activities related to verification of a specific test shall be governed by the relevant restrictions specified in Sections V, VI, and VII of this Protocol. Designated Personnel shall leave the test site or Designated Seismic Station upon completion of activities related to verification of a specific test as specified in the coordinated schedule. Designated Personnel who have been present at the test site for a period of six consecutive weeks or more may be replaced by individuals included on the list submitted in accordance with paragraph 1 of Section IX of this Protocol. Designated Personnel who have not been present at the test site for a period of six consecutive weeks may be replaced only for reasons of injury, illness, or family emergency, and shall be replaced by individuals included on the list submitted in accordance with paragraph 1 of Section IX of this Protocol.

5. If a transport aircraft other than a regularly scheduled commercial aircraft is used by the Verifying Party for transportation between the territory of the Verifying Party and the point of entry, its flight path shall be along airways agreed upon by the Parties, and its flight plan shall be filed in accordance with the procedures of the International Civil Aviation Organization applicable to civil aircraft, including in the remarks section of the flight plan a confirmation that the appropriate clearance has been obtained. The Testing Party shall provide parking, security protection, servicing, and fuel for aircraft of the Verifying Party at the point of entry. The Verifying Party shall bear the cost of such fuel and servicing.

6. The Testing Party shall ensure that all necessary clearances or approvals are granted so as to enable Designated Personnel, their baggage, and equipment of the Verifying Party to arrive at the point of entry by the estimated arrival date and time.

7. The Testing Party shall assist Designated Personnel and Transport Personnel and their baggage in passage through customs without undue delay. The Testing Party shall provide transportation between the point of entry and the test site or the Designated Seismic Stations for Designated Personnel, their baggage, and equipment of the Verifying Party, so as to enable such personnel to exercise their rights and functions in the time periods provided in this Protocol and specified in the coordinated schedule.

8. The Testing Party shall have the right to assign its personnel to escort Designated Personnel and Transport Personnel while they are in its territory.

9. Except as otherwise provided in this Protocol, movement and travel of Designated Personnel and Transport Personnel in the territory of the Testing Party, from the time of their arrival at the point of entry until their departure from the territory of the Testing Party at the point of entry, shall be subject to the authorization of the Testing Party.

10. During the period Designated Personnel and Transport Personnel are in the territory of the Testing Party, the Testing Party shall provide food, hotel-like living accommodations, working facilities, transportation, and medical services for such personnel, including access to its medical facilities for out-patient treatment and in-patient treatment, and also secure places for storing equipment. If the Verifying Party desires to provide its own food for its Designated Personnel and its Transport Personnel during their stay in the territory of the Testing Party, the Testing Party shall provide such assistance as may be necessary for such food to arrive at the appropriate locations.

Designated Personnel shall have the use of a complete kitchen at all times during their stay at the test site and at each Designated Seismic Station.

11. The Verifying Party shall have the right to include among its Designated Personnel a medical specialist, who shall be allowed to bring medications, medical instruments, and portable medical equipment agreed upon by the Parties. If Designated Personnel are treated in a medical facility of the Testing Party, the medical specialist shall have the right to consult on the recommended treatment and monitor the course of medical treatment at all times. The medical specialist of the Verifying Party shall have the right to require the Testing Party to provide emergency evacuation of any individual of the Designated Personnel who is ill or has suffered an accident to a mutually agreed medical facility in the territory of the Testing Party or to the point of entry for emergency medical evacuation by the Verifying Party. Designated Personnel shall have the right to refuse any treatment prescribed by medical personnel of the Testing Party, and in this case the Testing Party shall not be responsible for any consequences of such refusal. Such refusal must always be express.

12. The Testing Party shall provide the Designated Personnel Team Leader or his designated representative at all times access to:

(a) telephone communications between the embassy of the Verifying Party in the territory of the Testing Party and the working facilities and living accommodations of Designated Personnel at each test site and each Designated Seismic Station; and

(b) an international telephone network from their working facilities and living accommodations at each test site and each Designated Seismic Station.

13. The Designated Personnel Team Leader or his designated representative shall have the right to use at all times satellite communications to ensure communications via the International Maritime Satellite Organization (INMARSAT) commercial satellite system, or a system of equivalent performance, between each test site in the territory of the Testing Party and the telephone communications system of the Verifying Party. If the Testing Party does not provide such communications, Designated Personnel shall have the right to use their own equipment specified in paragraph 1(k) of Section VIII of this Protocol. In this case, installation and alignment of all such equipment shall be done jointly. All equipment of this system, except the remote control unit, shall be locked and placed under seals of both Parties, and personnel of neither Party shall have access to this equipment except under observation of personnel of the other Party. Only Designated Personnel shall use the remote control unit. If the Verifying Party provides satellite communications equipment, personnel of the Testing Party shall have the right, under observation of Designated Personnel, to make the following modifications provided they do not degrade the quality of the communications:

(a) install bandpass filters, to limit the frequency range, in the antenna signal transmission and reception lines;

(b) modify the remote control unit to prevent manual tuning; and

(c) modify the satellite communications equipment to allow the Testing Party to monitor all transmissions.

14. The Testing Party shall provide the following for use by Designated Personnel:

(a) portable radios for communications at the test location;

(b) telephones for communications between work areas and between work areas and living quarters of Designated Personnel at the test site or Designated Seismic Stations; and

(c) access to Testing Party-controlled vehicle-mounted radios for communications with the test location, work areas, or living quarters while Designated Personnel are in transit at the test site.

15. At the test site and each Designated Seismic Station, Designated Personnel shall observe all safety rules and regulations applicable to the personnel of the Testing Party, as well as all those additional restrictions with regard to access and movement as may be established by the Testing Party. Designated Personnel shall have access only to the areas in which they will directly exercise their rights and functions in accordance with Sections V, VI, VII, and VIII of this Protocol. The

areas at the test site or the Designated Seismic Station in which Designated Personnel shall have freedom of movement during the conduct of a specific test without the mandatory escort of personnel of the Testing Party shall be marked on the diagrams of the test site or the Designated Seismic Stations provided to the Verifying Party at the first meeting of the Coordinating Group specified in paragraph 10 of Section XI of this Protocol. In all other cases, the permission of the Representative of the Testing Party, and escort by, personnel of the Testing Party shall be required.

16. Designated Personnel shall not be given or seek access by physical, visual, or technical means to the interior of any explosive canister, to documentary or other information descriptive of the design of an explosive, or to equipment for control and firing of an explosive. The Testing Party shall not locate documentary or other information descriptive of the design of an explosive in such ways as to impede Designated Personnel in carrying out their activities in accordance with this Protocol.

17. Possession or use by Designated Personnel of firearms, ammunition, or substances containing narcotics, with the exception of those prescribed by a physician, in the territory of the Testing Party is prohibited. Except as otherwise provided in this Protocol, possession or use by Designated Personnel of the following items is also prohibited at the test site or a Designated Seismic Station:

- (a) photographic and video recording equipment;
- (b) radio transmitters or receivers other than those supplied by the Testing Party;
- (c) sound recorders;
- (d) teleoptical devices; and
- (e) personal computers.

18. Except as otherwise provided in this Protocol or as may be approved in writing by the Representative of the Testing Party, Designated Personnel are prohibited from removing any of the following items from the test site or a Designated Seismic Station:

- (a) soil samples;
- (b) plant samples;
- (c) water and air samples;
- (d) animals;
- (e) metal objects; and
- (f) rock samples or debris.

19. Designated Personnel shall have the right to remove from the territory of the Testing Party all items, including data, obtained in accordance with this Protocol.

20. The Testing Party shall have the right to inspect, in the presence of Designated Personnel, baggage and personal possessions of Designated Personnel upon their entry to or departure from the test site or Designated Seismic Stations. The Testing Party shall also have the right to inspect, in the presence of Designated Personnel, any packages received by Designated Personnel during their stay at the test site or Designated Seismic Stations or prepared for shipment by Designated Personnel from the test site or Designated Seismic Stations.

21. Except as provided in paragraphs 22, 23, and 24 of this Section or unless the Parties otherwise agree, the Verifying Party shall bear all costs of verification activities of Designated Personnel and Transport Personnel set forth in the coordinated schedule, including costs for use or consumption of materials, equipment, transportation, food, living and working facilities, medical assistance, communications, and services requested by and provided to the Verifying Party. The Verifying Party shall also bear the costs associated with transport aircraft in accordance with paragraph 5 of this Section.

22. The Testing Party shall bear all costs related to the preparation of its test sites, Designated Seismic Stations, and equipment storage facilities within its territory for the use of Designated Personnel as provided for in this Protocol.

23. With respect to a test of non-standard configuration:

- (a) the Testing Party shall bear the costs of the activities specified in paragraph 6(a) of Section V of this Protocol that are carried out with respect to the second and third satellite holes, if requested by the Verifying Party in accordance with paragraph 11 of Section XI of this Protocol; and



(b) the Testing Party shall bear the costs related to the conduct of a test identified by it as a reference test to satisfy the request of the Verifying Party in accordance with paragraph 11 of Section XI of this Protocol.

24. The Testing Party shall bear all costs related to transportation of equipment of the Verifying Party between:

(a) the point of entry and the location at which such equipment is subject to familiarization or inspection by the Testing Party in accordance with Section VIII of this Protocol;

(b) the location for familiarization or inspection by the Testing Party and the location at which such equipment is returned to the Verifying Party;

(c) the location at which such equipment is turned over to the Testing Party for storage and the storage location; and

(d) the storage location and the location at which such equipment is returned to the Verifying Party.

25. If the Verifying Party decides not to carry out activities related to verification that it specified in its initial notification, after technical and logistical support for these activities has been agreed upon in the Coordinating Group in accordance with paragraph 12 of Section XI of this Protocol, the Verifying Party shall reimburse the Testing Party for the costs of such agreed technical and logistical support incurred by the Testing Party prior to receipt of notification that the Verifying Party will not carry out the initially declared activities related to verification.

## **SECTION XI. PROCEDURES FOR CONSULTATION AND COORDINATION**

1. For the purposes of implementation of the Treaty and this Protocol, the Parties shall, immediately following entry into force of the Treaty, establish a Bilateral Consultative Commission, within the framework of which they shall meet, at the request of either Party, to:

(a) consider any questions relating to implementation of the Treaty and this Protocol;

(b) consider any suggestions for amendments to the Treaty or this Protocol;

(c) consider any technical or administrative changes to this Protocol of the nature provided in paragraph 2, 3, or 4 of this Section;

(d) consider any questions relating to compliance with the Treaty and this Protocol;

(e) consider any new verification technologies having a bearing on the Treaty or this Protocol;

(f) seek agreement on those matters specified in this Protocol as requiring agreement of the Parties; and

(g) seek agreement on questions related to costs for verification activities and procedures for reciprocal payments of such costs between the Parties.

2. If the Parties determine that the periods of time specified with respect to notifications in Section IV of this Protocol create practical difficulties and do not serve the interest of effective implementation of this Protocol, they may change such periods of time by agreement in the Bilateral Consultative Commission. Such agreed changes shall not be considered amendments to the Treaty or this Protocol.

3. If the Parties determine that, in the interest of effective implementation of this Protocol, the arrangements set forth in Section X of this Protocol regarding transportation, lodging, food, and services require modification, the provisions of Section X of this Protocol may be changed by agreement of the Parties in the Bilateral Consultative Commission. Such agreed changes shall not be considered amendments to the Treaty or this Protocol.

4. If the Parties determine that modifications to verification procedures, including modifications resulting from improvements in existing technologies, would enhance effective implementation of the basic aims of the Treaty or this Protocol, they may, in the Bilateral Consultative Commission, agree upon such modifications. Such agreed modifications shall not be considered amendments to the Treaty or this Protocol.

5. The Parties, through consultation, shall establish, and may amend as appropriate, regulations to govern the operations of the Bilateral Consultative Commission.



6. For each test with respect to which activities related to verification are carried out in accordance with this Protocol, the Parties shall establish a Coordinating Group of the Bilateral Consultative Commission that shall be responsible for coordinating the activities of the Verifying Party with the activities of the Testing Party. The Bilateral Consultative Commission may, as necessary, establish and amend procedures governing the activities of the Coordinating Group.

7. The Coordinating Group shall operate throughout the entire period of preparing and carrying out activities related to verification of a specific test, until departure of Designated Personnel from the territory of the Testing Party.

8. All members of the Coordinating Group from the Verifying Party shall be drawn from the list of Designated Personnel. The Representative of the Verifying Party to the Coordinating Group shall be the Principal Designated Personnel Team Leader, whose name shall be provided simultaneously with the notification of intent to carry out activities related to verification of a specific test. Within 15 days following receipt of this notification, the Testing Party shall provide the Verifying Party with the name of its Representative to the Coordinating Group.

9. The first meeting of the Coordinating Group shall be convened in the capital of the Testing Party within 25 days following notification by the Verifying Party that it intends to carry out activities related to verification of a specific test. Thereafter, the Coordinating Group shall meet at the request of either Party.

10. On the first day of the first meeting of the Coordinating Group, the Testing Party shall present a list, including times and durations, of all activities it intends to carry out that could affect the rights of the Verifying Party provided in this Protocol with respect to activities declared by it and related to verification of a specific test. If the Verifying Party has provided notification of its intent:

(a) to use the hydrodynamic yield measurement method or carry out an on-site inspection, the Testing Party shall provide the Verifying Party with the following information:

- (i) the number of emplacement holes for the specific test;
- (ii) with respect to each emplacement hole, whether, for the purposes of this Protocol, the emplacement hole shall be deemed vertical or horizontal; and
- (iii) the number of explosions included in the test and the location of each planned end of each emplacement hole and of the corresponding planned emplacement point, to the nearest 10 meters;

(b) to use the hydrodynamic yield measurement method with respect to a test of standard configuration that includes more than one explosion, the Testing Party shall provide, in addition to the information specified in subparagraph (a) of this paragraph, the following information:

- (i) whether any explosion has a planned yield exceeding 50 kilotons, and, if so, which explosion or explosions; and
- (ii) whether any explosion has a planned yield exceeding 35 kilotons, and, if so, which explosion or explosions; and

(c) to use the hydrodynamic yield measurement method with respect to a test of non-standard configuration, the Testing Party shall provide the information specified in subparagraphs (a) and (b) of this paragraph, as well as the following information:

- (i) a detailed description, including dimensions, of each emplacement hole and any access or bypass tunnels connected to each emplacement hole if any portion of an access or bypass tunnel is within the hydrodynamic measurement zone;
- (ii) the dimensions of each explosive canister and its orientation in the emplacement hole;
- (iii) the density and dimensions of each choke section; and
- (iv) the location and configuration of any access or bypass tunnels and any known voids with a volume larger than one cubic meter, within 50 meters of the wall of each emplacement hole within the hydrodynamic measurement zone, and the bulk density of the stemming material if these voids are to be stemmed.

11. Within 15 days following the convening of the first meeting of the Coordinating Group, the Verifying Party shall provide the Testing Party, in the Coordinating Group, with a list of the activities it intends to carry out, as well as those activities provided for in this Protocol that it intends not to carry out. The Verifying Party shall also provide the Testing Party, in the Coordinating Group, with a preliminary statement of its requirements for technical and logistical support for the activities related to verification that it intends to carry out and whether it will require the Testing Party to provide the cables specified in paragraphs 3(a) and 3(b) of Section VIII of this Protocol for its use. If the Verifying Party has notified the Testing Party that it intends to use the hydrodynamic yield measurement method with respect to a test of non-standard configuration, the Verifying Party also shall inform the Testing Party:

- (a) whether it requires a reference test; and
- (b) whether it will actually carry out hydrodynamic yield measurements of the test of non-standard configuration, and, if so, which measurements, and:
  - (i) the number of satellite holes required and the specific distance and azimuth relative to the emplacement hole of the second and third satellite holes, if such are requested by the Verifying Party and, if the Testing Party is unable to prepare the first satellite hole in accordance with the conditions for such hole in the standard configuration, the distance and azimuth of that satellite hole relative to the emplacement hole; and
  - (ii) in which satellite holes the Verifying Party intends to use transducers and associated power supplies.

12. Within 10 days following receipt by the Testing Party of the information specified in paragraph 11 of this Section, the Parties, in the Coordinating Group, shall develop and agree upon a coordinated schedule, which shall include specific times and durations for carrying out activities related to verification, ensuring the rights of each Party provided in this Protocol, and taking into account the number of Designated Personnel that will carry out activities related to verification of a specific test in accordance with Sections V, VI, and VII of this Protocol. The coordinated schedule shall reflect those numbers.

13. Agreement of the Representative of each Party to the Coordinating Group shall constitute agreement of the Parties for the purposes of this Protocol with the exception of paragraphs 3, 4, 5, 6, and 9 of Section III of this Protocol and paragraph 2 of Section XII of this Protocol.

14. Upon completion of activities related to verification of a specific test, the Designated Personnel Team Leader at the test site or at each Designated Seismic Station shall prepare a written report, in the language of each Party. The report shall be factual. It shall list activities carried out by Designated Personnel, with dates of their completion, and shall include lists of information, data, photographs, and samples obtained by Designated Personnel or provided by the Testing Party in accordance with this Protocol. The report shall list technical and logistical activities carried out by the Testing Party in support of activities related to verification. The Designated Personnel Team Leader shall include in the report comments on any ambiguities not resolved during the carrying out of activities related to verification. The Representative of the Testing Party may include in the report comments responding to these ambiguities. The Designated Personnel Team Leader shall complete the report prior to the scheduled departure of Designated Personnel from the test site or Designated Seismic Station. The Designated Personnel Team Leader and the Representative of the Testing Party shall each sign the report and retain a copy.

15. If, in the course of implementing activities related to verification of a specific test, in accordance with this Protocol, questions arise requiring prompt resolution, such questions shall be considered by the Coordinating Group. If the Coordinating Group is unable to resolve such questions, they shall immediately be referred to the Bilateral Consultative Commission for resolution.

## **SECTION XII. RELEASE OF INFORMATION**

1. Nothing in the Treaty and this Protocol shall affect the proprietary rights of either Party in information provided by it in accordance with the Treaty and this Protocol, or in information that may be disclosed to the other Party or that may become known to the other Party in preparing for or conducting a test. Claims to such proprietary rights, however, shall not impede implementation of the provisions of the Treaty and this Protocol.
2. Public release of the information provided in accordance with this Protocol or publication of material using such information may take place only with the agreement of the Testing Party. Public release of the results of observation or measurements made by Designated Personnel may take place only with the agreement of both Parties.

### **SECTION XIII. ENTRY INTO FORCE**

This Protocol is an integral part of the Treaty. It shall enter into force on the date of entry into force of the Treaty and shall remain in force as long as the Treaty remains in force.

DONE at Washington, in duplicate, this first day of June, 1990, in the English and Russian languages, both texts being equally authentic.

FOR THE UNITED STATES OF AMERICA: President of the United States of America	FOR THE UNION OF SOVIET SOCIALIST REPUBLICS: President of the Union of Soviet Socialist Republics
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