

MAJOR
PROGRAMME 4:
On-Site Inspection



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“The sole purpose of an on-site inspection shall be to clarify whether a nuclear weapon test explosion or any other nuclear explosion has been carried out in violation of Article I and, to the extent possible, to gather any facts which might assist in identifying any possible violator.”

(ARTICLE IV, PARAGRAPH 35)

The build-up of the on-site inspection (OSI) regime continued in 2000. The major elements of OSI are inspectors, equipment and the Operational Manual. In 2000, emphasis was placed on preparing the draft of the Operational Manual. Papers contributed by States Signatories and the PTS were combined and edited to form part of an initial draft rolling text. A workshop, a tabletop exercise, and introductory and experimental advanced training courses were conducted to develop the OSI elements, especially the draft manual. Equipment for passive seismic and low resolution gamma measurements was delivered in 2000 and the testing of the equipment began. Difficulties were identified in procuring high resolution gamma and radioactive xenon measurement equipment. A special account was established by the Preparatory Commission to facilitate procurement of equipment.

DOCUMENTATION

DEVELOPMENT OF OSI OPERATIONAL MANUAL: FPC PROCESS AND PTS CONTRIBUTIONS

In late 1999 the Preparatory Commission decided that the development of the draft OSI Operational Manual required a greater priority. Accordingly, in 2000 the PTS reallocated resources to support the process of editing by the OSI Programme Coordinator and Friends (FPC), a group established by the Commission. The FPC were tasked to objectively edit all available resource material from the States Signatories and the PTS for the compilation of the initial draft

rolling text of the manual. The PTS provided technical and substantive support to five FPC sessions. This work will lay the basis for the elaboration phase of the draft manual, which will begin in 2001. The PTS remains ready to support the States Signatories in this next phase. PTS priority will continue to be given to this important work.

The PTS also contributed to the development of the draft manual by producing some 25 papers in 2000 as resource input for the FPC process. By the end of 2000, inputs (from all sources) existed for about 75% of the manual.



The initial draft rolling text of the manual is a bulky document. To facilitate the elaboration of the manual, the PTS developed a CD reference tool which will contain the English version of the rolling text, all resource material and the Treaty text. The three parts will be hyperlinked for ease of cross-referencing. The CD is expected to be ready by June 2001.

COMPUTER REFERENCE
TOOL FOR ELABORATION OF
OPERATIONAL MANUAL

To assist the development of the Operational Manual, the PTS organized a sixth OSI Workshop, on OSI Technologies: Methodologies and Techniques for Application, which was held in Vienna from 26 to 30 June 2000. The workshop, attended by 45 experts from 15 States Signatories, focused on functional and operational requirements for OSI equipment in both the initial and continuation periods of inspection, logistical issues and standing arrangements. Results of past workshops were reviewed and processed into more easily usable resource input for the development of the manual. Recommendations on functional and operational requirements for OSI equipment and their specifications were also produced for consideration by WGB. Some of the recommendations were used during the FPC editing process. The final workshop report was distributed to States Signatories.

WORKSHOPS

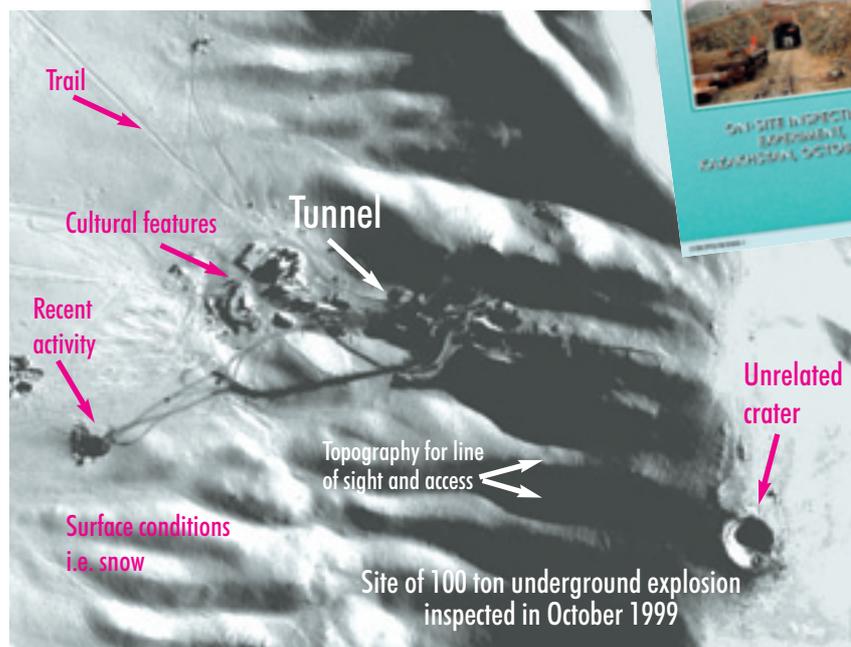
Preparations commenced for a seventh workshop, which will be hosted by China and held in Beijing in 2001. This workshop will also contribute to the development of the manual.

Methodology projects for 2000 were adjusted according to the Preparatory Commission decision to give priority to the development of the Operational Manual. In that regard, emphasis was placed on utilizing the lessons learned in the 1999 field experiment in Kazakhstan to develop concepts for activities to be covered by the manual and to prepare contributions to the manual on the basis of the field experiment.

METHODOLOGY AND FIELD
EXPERIMENTS

Studies were conducted on the logistical capabilities required and available at Vienna International Airport, and on a concept for health and safety support for OSIs. A prototype computer-based tool for the selection of inspection team members was developed and demonstrated to WGB, and acquisition of hardware and software for a geographical information system was initiated.

A technical report on the OSI experiment in Kazakhstan in 1999 was distributed to States Signatories. This report provides a comprehensive discussion of the planning and execution of the experiment and contains recommendations based on the lessons learned. There were 51 recommendations of relevance to the development of the manual, including health and safety



aspects. Of these recommendations, 37 were or are being addressed by the PTS and 14 are for possible action by the Preparatory Commission. The results of the experiment also formed the basis for planning field experiments proposed for 2001 and 2002.

TRAINING AND OPERATIONS

SECOND TABLETOP EXERCISE

The second OSI tabletop exercise (TTE-2) was held from 29 November to 1 December 2000. Its purpose was to test the operational procedures of the OSI Operations Support Centre (OSC). The OSC, staffed by eight OSI experts from States Signatories, was exercised by a control team of six simulating the OSI environment. TTE-2 followed closely the guidelines of WGB to conduct a brief, cost effective exercise, implementing lessons learned from the first tabletop exercise. The reports of the control team, the OSC team and a commentator independent of the other participants concluded that the Standard Operational Procedures (SOP) developed for this exercise and tested during its conduct provided a good basis for further development. It was recognized that keeping the SOP as a handbook for operating the OSC separate from the manual would have the merit of making their update easier. Nevertheless, with some refinement certain elements of the SOP might be considered for inclusion in the draft manual. The need for a dedicated OSC for OSI in the future was also recommended.

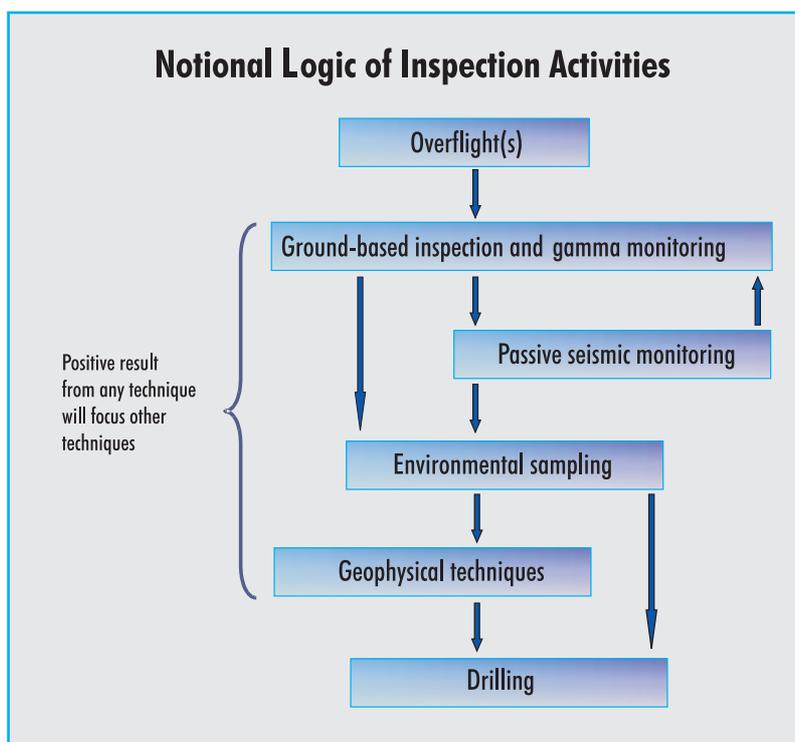
TRAINING

Following WGB approval, the PTS conducted a formal bid process during July–October to select a contractor to prepare a Long Range Plan (LRP) for the OSI Training and Exercise Programme. A contract was signed and the contractor is scheduled to deliver the plan by the end of September 2001. The LRP will set out the full range of possible training courses and exercise activities required to train inspectors and inspection assistants, as required by the Treaty. It will include detailed curricula for training courses and the planning of exercises, as well as a task analysis of all professions required in the inspection team and a cost analysis of the LRP.

es, as well as a task analysis of all professions required in the inspection team and a cost analysis of the LRP.

The fourth OSI Introductory Course took place in March 2000 and was attended by 36 trainees from 32 States Signatories. By the end of 2000, 141 persons had completed introductory training courses. This cadre of experts has already been used for selection of candidates both for OSI exercises and advanced courses and for testing OSI equipment.

The PTS, with close cooperation of Russian Federation authorities, conducted the first OSI Experimental Advanced Course in Snezhinsk, at the All-Russian Research Institute of Technical Physics (VNIITF) of the Russian Federal Nuclear Center, from 8 to 16 November 2000. The course participants included 13 OSI experts from States Signatories, 12 lecturers, including 9 cost-free



Russian lecturers, and 3 PTS staff members. Various approaches to developing the curriculum of the integrated type of advanced course were tested. Some ideas that could be reflected in additional contributions to the manual were presented (such as for phenomenology of nuclear explosions and for OSI personnel and training). The report on the course will be used for further development of advanced courses.

To facilitate the nomination of suitable trainees and potential inspectors by States Signatories to the Training and Exercise Programme, the PTS prepared a document describing a model of the status of OSI inspectors and inspection assistants, as tasked by WGB. It takes into account arrangements implemented for inspectors by the Organisation for the Prohibition of Chemical Weapons, the International Atomic Energy Agency and the United Nations Special Commission.

A list of equipment for use during OSIs must be considered and approved at the initial session of the Conference of the States Parties. The three core objectives for 2000 towards this goal were: to define a list of core and auxiliary inspection equipment and detailed technical requirements and specifications for this equipment; initiate the procurement of these equipment items, initially for testing and training purposes; and develop and implement plans for conducting technical tests, as necessary, for selected equipment items.



EQUIPMENT

Although equipment issues are complex, significant progress was made during 2000, built on achievements of previous years. The PTS acquired items of equipment on the basis of the initial technical requirements adopted by the Preparatory Commission, related to four OSI technologies: passive seismic equipment, still and video photography, visual observation and position finding, and low resolution gamma search equipment. Difficulties in acquiring the high resolution gamma spectrometer tool for field or laboratory use and xenon sampling, separation and measurement equipment were encountered, since these items are not available off the shelf. Consequently, the PTS pursued several strategies to acquire these items. The assistance of States Signatories was sought to make them available on loan or lease, or as a donation to the PTS.

PROCUREMENT

Initial technical and functional requirements for OSI techniques and activities (except drilling) in the period following Executive Council approval of the continuation of an inspection were developed for the further consideration of WGB. This completed the drafting by the PTS of initial technical requirements, for further consideration by WGB and the Preparatory Commission, for the principal techniques that may be employed during an inspection (except for drilling).

SPECIFICATIONS FOR CONTINUOUS PERIOD OF INSPECTION

TESTING

At the request of the Preparatory Commission, the PTS began to develop initial plans to conduct technical tests, as necessary, of OSI equipment that it had obtained. On this basis the PTS commenced technical testing of the passive Seismic Aftershock Monitoring System (SAMS) delivered to it in March 2000. The technical tests are being performed in three phases under direct PTS supervision. Phase A was undertaken at the Vienna International Centre in October, with the participation and assistance of 10 experts in field seismology and local aftershock monitoring from nine States Signatories, an observer and 5 PTS staff members. This also afforded an opportunity for the participants to become familiar with the technical and system functionality of the SAMS and ensured testing transparency as requested by the Commission. Results from these tests are being evaluated by the PTS and will be presented in a technical report.

SPECIAL ACCOUNT

The PTS proposed the establishment of a special account to facilitate the procurement of equipment, in recognition of the difficulties in completing the procurement process within the annual budget cycle. The Preparatory Commission approved the proposal and an account will be established to operate from 2001.