

Testing the Treaty's on-site inspection capabilities: The Integrated Field Exercise 08

by Oliver Meier and Andreas Persbo



INSPECTORS SEARCH FOR ANOMALIES IN THE SURROUNDINGS TO IDENTIFY THE LOCATION OF A POSSIBLE NUCLEAR EXPLOSION

The Integrated Field Exercise 2008 (IFE08) was a large-scale simulation conducted in September 2008 to assess the state of readiness of the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization's (CTBTO) on-site inspection (OSI) regime. IFE08 demonstrated that the CTBTO's¹ efforts to lay the groundwork for future inspections are on the right track. Based on the exercise, it can be expected that the CTBTO will be able to conduct a successful OSI once the Treaty has entered into force. The biggest hurdle to finalizing future OSI procedures has been the absence of the United States and non-signatories like India and Pakistan from preparations.

¹ Once the Comprehensive Nuclear-Test-Ban Treaty enters into force, the Preparatory Commission will cease to exist and the CTBTO will become a fully operational.

An OSI is a strong deterrent to potential Treaty violators

On-site inspections add a crucial layer of security to the Treaty's verification regime. If an ambiguous event is detected by the International Monitoring System (IMS), any Member State may request an OSI to seek clarification as to whether a prohibited test has indeed taken place. The CTBTO's ability to conduct an inspection in a swift and effective manner once the Treaty has entered into force will thus act as a strong deterrent to a potential proliferator, who would think twice before conducting a clandestine nuclear test if inspectors have a high likelihood of finding the smoking gun of a Treaty violation.

Longest and hardest exercise to date

IFE08 provided a realistic assessment of the CTBTO's preparations because, for the first time ever, virtually all OSI



A CRATER FORMED BY AN UNDERGROUND NUCLEAR EXPLOSION

Verification science



INSPECTOR USING BINOCULARS TO LOOK FOR ANOMALIES ON THE GROUND.



VISUAL OBSERVATION IS AN IMPORTANT TECHNIQUE DURING THE INITIAL INSPECTION PHASE.

components were tested in combination. The four-week exercise, which involved more than 200 participants, was the longest and hardest of its kind to date. Members of the inspection team were faced with a tough and realistic scenario. The inspection team, which arrived in Kazakhstan's capital Almaty on 1 September 2008, had been briefed that a seismic event had been detected by IMS sensors at the former nuclear test site of the fictional state of Arcania. The Arcanian government denied any wrongdoing and claimed that an earthquake had triggered the event. Participants played out this scenario to the full and – as is to be expected in a real inspection – the relationship between the inspection team and Arcanian hosts fluctuated repeatedly between cooperation and confrontation.

Initial inspection phase

The choice of inspection area, which was located in a remote corner of the former Soviet Union test site, Semipalatinsk, ensured that equipment was tested under realistic conditions. IFE08 got off to a difficult start because of unexpectedly cold, wet and rainy weather. But inspection team members managed to move

more than 50 tonnes of equipment within days to the base of operations and set up camp. The first 12 days were spent surveying the 1,000 square kilometre inspection area. During this initial inspection phase, inspectors primarily looked for anomalies that might be indicative of a nuclear test and tried to narrow down the search area. For example, they deployed 28 seismic sensors in the field, which covered 80 to 90 percent of the inspection area and picked up even small tremors, such as those that might be indicative of a collapsing cavity created by an underground nuclear test explosion.

Exercise continues to next level

By sending inspectors into an area in which the Soviet Union had conducted 458 nuclear tests between 1949 and 1991, a good deal of reality was injected into the exercise. This was particularly the case during the continuation phase of the inspection, which is used to investigate specific anomalies: instruments successfully located and identified cavities created by underground tests, even though some were over 20 years old. All in all, 10 different



OVER 50 TONNES OF EQUIPMENT WERE SHIPPED TO THE INSPECTION AREA.



inspection technologies were used successfully and more than 50 potential future inspectors received valuable training.

Opportunity to test the draft Operational Manual

The exercise was also useful in evaluating operational procedures for future OSIs. Finding the correct balance between the rights and obligations of inspectors and the inspected State Party will be crucial for the success of any real inspection. For the purpose of the exercise, the Member States developed a 178-page draft Operational Manual to guide the inspection team and inspected State Party officials. Many participants expect that the lessons learned during the exercise will infuse new life into diplomatic consultations on the Operational Manual, which will guide the conduct of any future, actual inspection.

IFE08 concludes successfully

The outcome of IFE08 confirms that more than 10 years of OSI preparations

by the CTBTO have paid off. The basic capabilities needed to conduct an on-site inspection are in place. What is now needed is a realistic expectation that the Comprehensive Nuclear-Test-Ban Treaty (CTBT) will enter into force in the not-too-distant future. This would instill more urgency into discussions on the future OSI regime. One positive signal in this regard would be a quick revision by the Obama administration of the decision by George W. Bush to boycott discussions on OSI and withhold funding for all CTBTO activities related to OSI.

CTBT proves its verifiability

This OSI milestone testifies to the robustness of the burgeoning verification regime, which looks destined to become far more effective than most expected when the CTBT was negotiated. In any event, what occurred on the steppes of Kazakhstan should inspire confidence in the CTBTO's operational readiness by the time the Treaty becomes legally binding. ■

Biographical note

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Both authors participated as NGO observers in the IFE08. ■



THE INSPECTION'S BASE CAMP WAS LOCATED OVER 150 KM AWAY FROM THE NEXT TOWN.