

Part B—Lessons and Problems of Verification

THE LESSONS OF EXPERIENCE

THE HISTORICAL APPLICATION OF VERIFICATION HAS BEEN UNEVEN. IT IS evident that the verification regimes established to date are imperfect, and that states can cheat on their obligations without being caught. On the other hand, the lessons of failure can inform efforts to improve verification. For example, Iraq's successful ability to cheat on its Nuclear Non-Proliferation Treaty (NPT) obligations and evade full-scope safeguards led to the improvement of the safeguards regime.

Some verification regimes have yet to be fully tested. The strengthened International Atomic Energy Agency (IAEA) safeguards regime is not in force in many countries where cheating is suspected. Likewise, the Comprehensive Nuclear Test-Ban Treaty (CTBT) verification regime is not yet in force. Therefore, assessments of the technical strengths and weaknesses of these regimes can, for practical purposes, only be undertaken on a theoretical level.

Nevertheless, there are some important lessons that can be derived from the experiences with verification. These lessons can be used to inform efforts to further improve the design of future verification regimes and the modification or application of existing regimes.

Verification Works, at Least to Some Extent

The first and perhaps most important lesson is that existing nonproliferation verification systems work, at least to some degree. However, verification systems work better when inspectors are given the tools they need, and when they engage in verification with the right attitude. For example, without the IAEA's persistence, the discrepancies between North Korea's declaration and the environmental samples taken at its nuclear facilities never would have come to light. The revelations of the Agency's failure in Iraq were fresh in the inspectors' minds when they inspected North Korea's facilities, and so they approached the North Korean verification effort with new techniques and a more skeptical attitude than perhaps they would have only a few years earlier.

INFCIRC/540, the Additional Model Protocol, formalizes many of the tools used by the IAEA to uncover the nuclear activities in Iraq, North Korea, and South Africa. Doing so will improve the capability of the IAEA to verify NPT commitments more fully. However, inspections and verification carried out under the Model Protocol will need to be undertaken with a greater level of skepticism and aggressiveness than under classical full-scope safeguards. Whether the IAEA is capable of institutionalizing this attitude is unknown.

The CTBT verification mechanism, while imperfect, also is an achievement, if only because of its great deterrent value. The use of national technical means (NTM)—which played a major role in convincing the IAEA to be persistent in the North Korean case—will complicate a cheater’s efforts to hide its activities.

The IAEA Action Team’s investigation of Iraq’s nuclear activities has been less successful. In the absence of cooperation from Iraq, and given the weakening political support for the inspectors’ activities, the Action Team’s mission was doomed to fail. However, there is no question that the inspectors’ presence in Iraq disrupted, deterred, and delayed Iraq’s pursuit of nuclear weapons. The absence of inspections in Iraq since the end of 1998 causes great concern that Iraq has used the period since then to make significant progress in obtaining nuclear weapons.

On the negative side, the goals of verification remain difficult to achieve. This is particularly true in cases where the goal is negative verification—proving the absence of activities and materials. For example, the Model Protocol, the CTBT verification regime, and the Action Team’s plans for on-going monitoring and verification are to provide assurances that clandestine nuclear weapons activities are not taking place. However, none of these regimes can draw such absolute conclusions.

The lesson of these experiences is that verification organizations must understand and clearly communicate their own limitations. The Agency, in particular, has had difficulty historically in admitting its own problems.

Transparency is Essential

Another important lesson is that transparency on the part of the inspected state is essential. The lack of transparency under INFCIRC/153, in that member states can choose which facilities to declare, fundamentally undermines the ability of full-scope safeguards to ensure that a non-weapon state is in compliance with its NPT agreements. As the case of Iraq before 1990 shows, a state may be in full technical compliance with its verification obligations, but still may be cheating.

Transparency is more important in cases where the goal is negative verification. When a state engages in concealment activities, as Iraq had under the Action Team’s inspection effort, the fruits of verification are tainted. The relationship between the Iraqi authorities and the Action Team was non-cooperative and full of mutual distrust. Iraq only acknowledged aspects of its program when independent physical evidence came to light. Iraq limited the Agency’s verification activities. The lesson is that a “technically coherent” picture of a state’s activities is not necessarily a complete picture. The IAEA has recognized this distinction in many statements it has made, but remains ambiguous in other statements and is trying to maintain that some negative verification goals are fully achievable and capable of reaching conclusive results.¹

Even when a state is transparent, it may be difficult to draw conclusions. For example, there was little doubt about the honesty, openness, transparency, and cooperation shown by South African officials and nuclear weapon scientists towards special IAEA investigators. However, it took a long time and a team of highly skilled and knowledgeable inspectors to arrive at a positive conclusion that South Africa had fully dismantled its nuclear weapons and accounted for its nuclear-explosive materials.

Where a state is not transparent, it is appropriate for the verification agency to be skeptical. When North Korea refused to allow the IAEA to conduct a special inspection, the Agency—correctly—pronounced North Korea to be in noncompliance with its safeguards obligations. By extension, North Korea's compliance with its NPT obligations was cast in doubt.

Political Support for Verification Activities is Imperative

The history of verification shows that, even under the most technically rigorous verification regime, political support by the international community is vital. If a verification regime lacks support, it will fail.

Political bodies—the IAEA Board of Governors and General Conference, the CTBT Executive Council, and the UN Security Council—have the ultimate authority to judge the findings of verification. However, political objectivity and the rule of reason are not always the governing factors of political decision-making. When these bodies fail to act on behalf of the inspector's doubts, then verification has failed.

History is replete with examples, the most obvious being the IAEA Action Team's inspections and monitoring in Iraq. Despite evidence of Iraqi concealment and deception, certain permanent members of the Security Council have had greater sympathy for the Saddam Hussein regime than for the integrity of the inspection effort. Support for the inspections dwindled with time, as the Security Council overlooked Iraq's transgressions and accepted incomplete verification results. Lacking political support, the Agency (and UNSCOM) was placed on the defensive, and forced to allow Iraq to dictate the terms of the inspections. Eventually, the Action Team and UNSCOM were forced to abandon the verification effort altogether.

There are other examples where the lack of political support has led to the failure of verification. The IAEA successfully identified discrepancies between the North Korean declaration and the technical data it obtained; on purely technical grounds, the Security Council should have put North Korea on the defensive. However, the Security Council met the Agency's findings with division rather than unanimity. North Korea's decision to withdraw from the NPT led to further divisions in the Security Council about how to respond. The result was a unique agreement—the Agreed Framework—that deferred many of the tough verification tasks to some point in the future. Instead of being

punished, North Korea succeeded in obtaining economic benefits while deferring the fulfillment of its obligations to a later date.

Resources are Important

Rigorous verification requires resources. Equipment, analytical facilities, skilled personnel, and training are vital to successful inspection efforts. Lacking such resources, verification efforts will be unable to reach sound conclusions.

Similarly, the verification regime is undermined if the inspected state can influence or limit the skills brought to bear by the inspectorate. For example, Iraq objected to the composition of both IAEA Action Team and UNSCOM inspection teams and, towards the end of the 1990s, did all it could to deny U.S. membership on these teams. North Korea brought the IAEA inspections to a standstill when it refused to permit special inspections.

A key resource that has often been overlooked is the provision of evidence gathered by NTM of member states. NTM was vital in triggering the request for a special inspection in North Korea, and helped UNSCOM and the IAEA to identify sites for inspection in Iraq. The CTBT is unique among negotiated verification arrangements in that it explicitly permits NTM-gathered evidence to trigger verification activities. The Model Protocol permits the IAEA to gather evidence from a broad array of sources in its assessment of a state's declaration, but does not explicitly refer to NTM.

Incorporating NTM into the verification effort requires resources. Such evidence must be assessed, weighed against other indicators of prohibited activities, and factored into planned verification activities.

The Necessity of Changing Attitude

The attitude of the inspectorate is important to the success of the verification regime. Too often the inspectorate focuses on the process of verification rather than on the larger picture. Rather than undertake inspections with a skeptical attitude, the inspectors seek to ensure that a smooth inspection takes place, that nothing of consequence is found, and that all appropriate steps have taken place.

Under INFCIRC/153, Agency inspectors act mainly as accountants who ensure that all declared nuclear material is accounted for. The goal of inspections is to see that everything is in its appropriate place; inspectors have little if any incentive to ask tough questions. Institutionally, the Agency's attitude has been to avoid admitting mistakes. Rather than focus on the bigger picture, i.e., whether or not an inspected state has violated its NPT commitments, the Agency has sought to ensure the technical compliance of states with its safeguards obligations.

With the adoption of the Model Protocol, the Agency will need to change its attitude. Inspectors no longer can point to tidy material balance

sheets as proof that a state is in compliance. Inspectors will need to consider broader sources of information, ask tough questions, visit unfamiliar sites and areas, and be willing to challenge an inspected state's explanations. Whether inspectors will be given the resources and the incentives to undertake these tasks is unknown.

Regional Systems have Certain Advantages over International Systems

It is perhaps too soon to draw firm conclusions about the utility and efficacy of regional treaties in the nuclear realm. Of those discussed, only the Argentine-Brazilian Agency for Accounting and Control of Nuclear Materials (ABACC) provides for a truly independent regional (in this case, bilateral) inspection regime. For all the strength of its safeguards system, EURATOM functions around the presence of nuclear weapon states among its members.

However, regional systems seem better suited to incorporating many of the lessons and recommendations discussed in this and subsequent chapters. Although practical experience is limited, some generalities can cautiously be suggested:

- Under regional regimes, nations would be more hesitant about acting in violation of the regime's purpose, and state parties would be more likely to comply with their obligations. The number of parties to the NPT that have not concluded even INFCIRC/153-type safeguards agreement with the IAEA, contrary to their obligations, attests to an inherent weakness of the international system.
- Common interests of the member states are better defined under regional regimes, where states are watched by their neighbors rather than by an international civil service. Any noncompliance on a regional level could lead to hostility and outbreak of political and military actions—a factor that can be largely discounted by members of the international system.
- A strong consensus is usually better achieved under regional arrangements, and thus the number of compromises that weaken universal agreements are reduced. Regional inspections would tend to get to the bottom of any unresolved issue, while international inspections too often seek to avoid disagreements and problems with inspections. At the international level, empathy among the inspectors with the inspected state, and the interaction between the host state and the inspectors, can play a very large and detrimental role in the inspection process.
- Regional verification has the potential to be much more substantial than international verification. Mutual inspections are stronger, and the probability of detecting noncompliance is higher than in international verification regimes, since it is in the inspectors' personal and

national interest to detect noncompliance. This increases the deterrent value of the regional verification system relative to the international system.

- An issue whose importance is, perhaps, hard to underestimate is the issue of mentality. Regional subtleties, the body language accompanying any human interaction, and the manner of carrying out business are unique to every region. In a truly universal verification system, the difference of mentality between the verification organization personnel and the host country could be significant. Any misunderstanding, however inadvertent, could create a hostile atmosphere and disrupt the possibility of a well-executed inspection. In contrast, regional interactions would be much simpler, because of the common ways of doing business.

A Look Ahead

Admittedly, some of the “lessons learned” are really “questions identified.” But learning to ask the right questions is also a good lesson to be learned, and it certainly will take courage, and a willingness to admit error or failure, to improve existing verification regimes and design better ones. The next chapter turns to the specific problems inherent in an international verification system. Recommendations for improving the system are given in Part C.

¹ See, for example, the statement: “The Agency prepared guidelines defining the conditions to be met by a State and activities to be performed by the Agency considered [to be] *adequate for drawing a conclusion of the absence of undeclared nuclear material and activities in a State.*” (emphasis added), IAEA 2000 Annual Report.

THE SHORTCOMINGS OF AN INTERNATIONAL VERIFICATION REGIME

I don't know the key to success, but the key to failure is to try to please everyone.

-Bill Cosby, American Humorist

THERE ARE MANY PROBLEM AREAS AFFECTING THE PERFORMANCE OF verification activities. Some of the problems are known to have occurred, and others are possible shortcomings. In some cases, having the regime's members identify and become aware of the problem could be sufficient to avoid pitfalls; addressing other problems will require changes to the verification system. Unfortunately, there will be some situations when the member states do not recognize the problems, will not make changes, and instead, accept the inevitable consequences.

Objectively assessing an international organization is not easy. Such organizations are more-or-less an "apple-pie and motherhood" proposition, and an objective view necessarily includes some criticism. This is nevertheless essential, because without a continuous review and presentation of constructive criticism, the end result could be one of an incompetent, whitewashing, money-wasting verification system that fails to do its job.

Failure must be avoided. This chapter presents the reasons why the present safeguards system is fragile, and could be prone to circumstantial failures.

Compromises

The term "compromise" has several definitions. For example, a compromise may be "a settlement of differences by arbitration or by consent reached by mutual concessions," or "something intermediate between or blending qualities of two different things." A compromise is also defined as "a concession to something derogatory or prejudicial; 'a *compromise* of principles.'"¹

The history of negotiating nuclear nonproliferation agreements and their verification mechanisms is replete with compromises of all three types. Diplomats who are involved in treaty negotiations want to conclude a treaty that not only achieves what they consider to be the main aims of the treaty, but also protects their country's basic interests. To do so, they may suggest treaty language that is vague, or ignores some points that, if resolved, could lead to renewed disagreement. Negotiators may wish to avoid confrontations, achieve an agreement solely for the sake of achievement, achieve a tactical goal, present a facade of consensus, or postpone conflict to another time. Their willingness to make compromises when addressing difficult issues can be crucial to achieving a consensus. However, such compromises can also have unintended

consequences for the treaty and its verification mechanisms. Often, such compromises serve to weaken verification.

Technical experts, who advise the diplomats in the negotiations, try to ensure that the diplomats understand the technical issues. In essence, their role is to see that the diplomats understand the consequences of being vague. As compromises are made or proposed, the experts will see the pitfalls looming ahead, and will worry about the eventual failure of the treaty. Their concern has not always been justified; in many cases, when the treaties were stronger than their technical components, they became international law despite possible technical weaknesses. However, loose technical details may cause treaties to lose their effectiveness.

Similarly, when implementing a verification mechanism, the inspectors and the inspected state may make compromises in order to resolve or clarify issues. The technical integrity of the verification regime may be undermined by the employment of many tricks, including: the omission of activities; misdirection of efforts; inaccuracy of reporting, including the non-reporting of important data; and the misinterpretation and misrepresentation of technical results.

Political pressure on the inspectorate to make compromises with the inspected state, and not challenge the declarations or data, may allow the results of a flawed inspection to stand. As long as the inspected state has done nothing blatantly wrong, the inspectorate (and its political bodies) will hesitate to give even the slightest offense. Experience shows that the final outcome of verification activities involves some degree of political compromise of this type, because making judgments that involve consequences are political acts.

To be sure, such a state of affairs does not necessarily mean that there is anything amiss in the inspected state. Taking note of the discrepancies, the worst that could happen in such cases would be a false accusation, which could be readily clarified by a state that had nothing to hide. However, if left unchallenged, these misdeeds could allow an inspected state to cheat, while at the same time receiving a clean bill of health (within the terms of the inspections).

The allowance for compromise to undermine the integrity of verification is the first problem area. Compromises affect much of the behavior of the verification organization, its relationship with its political bodies, and its relationship with the inspected state. To improve the verification regime, therefore, such compromises must be minimized or eliminated altogether. There can be no concessions in the demand for technical integrity, accuracy, and verity in performing the verification activities, in the analysis of data, in the reporting of results, and in making technical judgments.

An Achievement is Not Always an Accomplishment

One example of where compromise plays a negative role is when member states view the achievement or operation of a verification regime as an

end in itself, rather than a means to an end. To be sure, merely establishing an international verification mechanism is an impressive achievement by any standard. Doing so involves overcoming the tremendous difficulties, setting down procedures, amassing and training staff, and procuring specialized equipment.

However, the mere existence of the international effort cannot be seen as a substitute for verification. One must not confuse the success of creating or operating a verification organization with the accomplishment of the verification mission. Verification is an absolute measure, demanding absolute results.

The aim of any verification organization is to completely accomplish its tasks. The end result and measure of success must be the verification organization's ability to gather all pertinent information, perform all necessary technical activities, and reach correct and unambiguous conclusions. A sense of achievement could, at times, cause the abandonment of the essential thoroughness with which the operations must be run.

The Possible Conflict Between Technical Judgments and Political Convenience

In theory, there is a well-defined line between the activities of a verification organization's secretariat (the technical body entrusted with the implementation of the tasks mandated by the political bodies) and the political views of its member states. The secretariat should play a purely technical role, while the policy-making organs of the organization (such as the International Atomic Energy Agency (IAEA) Board of Governors and General Conference) should set policy. The secretariat should have minimal political discretion, and any major issues needing political interpretation should be referred to the proper political bodies of the organization.

This does not always occur in practice. The aims of the secretariat and the policy-making organs can come into conflict. Although the basic aims of the policy-making organs and the secretariat may be similar, there may be different ideas about how to achieve these aims, and about whether these aims have been achieved. If the policy-making organs are not strong enough, the secretariat can create uncontrolled and embarrassing situations.² Serious situations can also result when a political body starts interpreting technical results.

Conflicts between the secretariat and the policy-making organs may result in either implicit or explicit pressures to report the results of verification in a biased way, especially if the results are not clear-cut. Any casting of suspicion, even on less important activities or outcomes, could lead to the distrust of some member states or the public at large. This distrust could cause irreparable harm to the reputation and eventual outcome of the verification activities.

Rarely does the technical point of view win these conflicts. However, the policy-making organs ignore the secretariat at their peril. Even if they do not react positively and implement the technical recommendations, the policy-making organs would do well to remember the technical conclusions and

reconsider them from time to time. Ignoring technical conclusions, without weighing the possible consequences, is the worst thing they could do. Ignorance can lead to the illusion that “all is well.”

Conflicts usually develop when the findings of the technical staff differ with the political, commercial, or financial interests of member states. For example, a state or a group of states on a policy-making organ may not wish to antagonize another state that was found to be at fault by the technical staff. The conflict would be exacerbated if the accused state were a leader of a group of states, or one that would retaliate by leaving the organization, thus weakening it in a significant way.

Conflicts may also develop when the accused state is an important supplier of goods, such as oil. Members of the policy-making organs could be slow to act when doing so could be detrimental to supplies or prices.

Fiscal considerations also come into play at the policy-making level. The need to act could be accompanied by the need for higher budgets for the secretariat, which member states are often unwilling to finance. These member states do not want, at times, to reconcile these opposing needs, and while asserting the need for strengthened activities, they deny the necessary funds to achieve them.

At times, groups of influential states in policy-making organs are prepared to accept verification results, conclusions, or even partial data. In cases where the results of verification are not so clear-cut, the results still may be accepted as satisfactory for some interim period, or at least until additional data and clarifications are forthcoming. The world community is very reluctant to make judgments that require punitive or condemnatory actions. Thus, policy-making bodies would prefer deferring any final decisions to some undetermined time.

On occasion, the policy-making organs cannot ignore the technical conclusions of verification, even if these conclusions conflict with their political goals. When this happens, the clash may be open and verbally violent, or it may take place behind the scenes. A well-known open clash occurred at the UN Security Council between some Council members and the UN Special Commission (UNSCOM) and the IAEA. At the IAEA, the clashes usually have been internal and not widely known.

To help minimize conflict, policy-making organs and the secretariat must take great care to assure that there is absolutely no doubt as to the straightforwardness and reliability of verification methods and outcomes. Whatever the political results, there must be no shadow cast on the professional work and the technical results achieved by those who established the system, performed the verification activities, and interpreted the results. All of these activities must be transparent to the organization's membership.

Cultural Conflicts

The secretariat of any international organization is a colorful mixture of personnel from many countries. Staff exhibit vast arrays of culture, ways of thought, philosophies and approaches to life in general, and to problem-solving in particular.

Given this mixture, a very basic, unwritten rule of the staff of international organizations is to avoid conflicts. This is achieved by finding common denominators that everyone can agree upon. Often, these solutions will fall short of what is needed. Building consensus usually means that the end result is rarely forceful.

The policy-making bodies of a verification organization also try to avoid conflicts among their members. There are usually two options: a “give and take” option, and the option of majority rule. The “give and take” option often results in a “least common denominator” as a basis for consensus. When states believe that they have sacrificed too much in seeking this consensus, problems may develop.

The other alternative—voting—is usually not happily accepted by the members of an international organization. Dissent can lead to a situation where unsatisfied states will go their own way, feeling that they have been cheated out of their rights and not given the proper attention that they deserve as equals. A vote will have some unwanted, even if not conscious, influence on staff members in the secretariat who come from states that have dissented in the vote.

The personnel of an international organization are still citizens of their home states. They owe allegiance to their states, and must consider their future employment activities back home, even as they complete (usually) short-term assignments with the international organization. Therefore, individual staff cannot afford to antagonize their home governments.

After serving with the international organization for a longer period, staff members grow closer to the image of the ideal international civil servant. This civil servant tends to place loyalty to his international organization at a much higher level than does his short-term colleague. Only long-term staff members, and staff members who are nearing retirement, can be expected to perform as true international civil servants.

In no way is this discussion intended to discredit the many honorable and hard working short-term staff members. Unfortunately, they are less motivated to articulate and fight for opinions that do not conform to those of their respective governments.

Staffing and Training for Non-Routine Issues

The work of most technical organizations includes both routine and non-routine work. Routine work is usually governed by well-planned, tested, and reviewed procedures, and personnel entrusted with routine work are

selected for their ability to perform the work accordingly. However, in an international organization such as the IAEA or the Comprehensive Test-Ban Treaty Organization (CTBTO), personnel are also selected based on a national distribution quota, which is usually devised according to their county of origin's financial contribution to the organization's budget.³ This additional criterion, although unavoidable, does an international organization much harm. A state may decide to nominate a candidate based on political connections, rather than on technical qualifications. Some states will even recommend a candidate that they want to "exile" to the international organization, even if only for a relatively short-term. In any case, the international organization will find it difficult to turn down a candidate, especially if the candidate comes from a state that has trouble filling its quota.

Training new staff in routine activities usually takes several months. There are some objective difficulties that must be overcome during training. One of the more important difficulties is language. Though a staff member in any UN-family organization is required to be proficient in one of the official UN languages, English is the most common. Unfortunately, the level of proficiency in English among the newly recruited staff is highly uneven.

A second issue that arises from time to time is the professional capability of the new recruits. Trainers will try to provide the recruits with the best training, and help them overcome any handicaps that could exist. The trainers are highly motivated to see that their candidates succeed. Consequently, a trainee rarely fails to pass the course.

Once staff members are trained, they should be able to perform all routine duties. At the IAEA, until recently, INFCIRC/153-type activities have been composed almost entirely of routine duties. With the adoption of INFCIRC/540, non-routine inspections, or inspections that could have a significant non-routine components, are increasingly becoming important. While technical procedures can be devised, the decision-making aspects of the non-routine work change based on the circumstances. Guidance for the inspectors should include not only the technical basis of operations, but also the type of information being sought, the methods for obtaining it, and the factors to be considered when making decisions. Many circumstantial factors have to be taken into account, such as local conditions, the liaison with the local authorities, and circumstances of safety and health.

The situation in non-routine inspections is, by definition, not easy. The temptation to retreat into routine-like work, involving well-established procedures, could be great. This pitfall should be avoided at all costs.

Inspectors responsible for carrying out advanced safeguards inspections should rarely come from the rank and file of "routine" inspectors. Rather, their professional background should be more advanced, and their training more thorough. They should learn to "expect the unexpected" in their work. They can be employed as team leaders and deputy leaders for verification

activities under the Model Protocol and the CTBT. Given a broader training, they can become team leaders of the IAEA's verification activities in Iraq.

Intolerance of Internal Dissent

Except for academic institutions, most organizations do not tolerate publicly presented dissent among their staff. When an issue has been decided, no one within the organization is permitted to publicly dissent from the decision. Rather, a unified front must be presented when discussing important issues, whether related to the organization itself, or to issues of international importance.

This is certainly true (and understandable) in commercial enterprises. It is also true and understandable for international organizations—to a limit. The intolerance of dissent cannot be permitted to include disagreements at the technical level of verification, such as debates over the meaning of measurement results, or the method to collect data. Nor can the intolerance of dissent reach the level of directorship.

Dissent must have its proper place, especially if it could alter the technical findings of the verification effort. The policy-making bodies of the organization should be made aware of any dissent between the technical staff and management. They should be presented with all the necessary information so they could arrive at their own conclusions.

A more serious situation could arise when dissent comes to light after the secretariat has published the findings of the verification effort. When this occurs, tradition dictates that those causing the “nuisance” by dissenting shall be gotten rid of. Whether this remedy is appropriate is an age-old issue, and its relevance depends on the facts of the particular case. However, one should remember that, at times, the dissenter could be right.

The Host-Inspected State Relationship

Inspected states may react in many ways that affect the efficacy of an inspection. On the one hand, there is the habit of many states, usually without any ulterior motive, to be gracious hosts to the representatives of the international organization. When this happens, the inspectors become subconsciously indebted to their host. The interaction between the inspector and the inspected may subtly change to a more collegial, if not outright friendly, relationship. Under these circumstances, it is reasonable to assume that the threshold level for reporting misdeeds could become higher, and that small discrepancies found during the inspection may be unnoticed and unnoted, if not forgiven.

At the same time, the host state could view the inspectors as a terrible nuisance. When a state agrees to be verified, it voluntarily gives up some elements of national sovereignty and rights to privacy. It undertakes responsibilities that may be expensive to implement, disruptive to industry, or politically difficult to accept. It risks placing in jeopardy commercial and

possibly security and military secrets, and risks possible interference with its nuclear activities. There are also concerns about the possibility of covert intelligence activities on the part of some individual inspectors.

Information that could come to the unwanted attention of inspectors could be related to the state's economic situation, to the morale of the population and of the personnel at a specific site, safety conditions at a nuclear site, security arrangements, and many other details. The disclosure of such information could embarrass the host state or, in a worst case, provide information that could be used maliciously or as a basis for causing physical harm to an installation or to the state itself.

The host country does not have many options to prevent the inadvertent introduction of dishonest inspectors or leakage of non-inspection-related information that could be embarrassing or place its sites and facilities in jeopardy. The host country must place its faith in the verification organization, its ability to recruit honest personnel, and in its ability to prevent the transfer of sensitive information to the outside world.

Host states also may view the inspectors as a terrible nuisance from a cost perspective. The most banal effect a verifying team can have on its host country is the expenditure of manpower and resources that must be assigned to accompany verification teams while they are present in the country. This escort has to be ready to answer questions and requests for clarifications that the inspectors may have. The escort must be responsible for the inspectors' safety and ensure that they do not take any action that could cause a safety hazard. The escort also must be alert to any possible inadvertent disclosure of confidential information that has nothing to do with the purpose of verification.

One way to address the problems and tensions in the host-inspector relationship is to develop and enforce a strict code of conduct that would unify the treatment of inspectors by the host states and limit the benefits that host states can give to international civil servants. In this way, neither the hosts nor the inspectors will expect much, and any deviation from the rules will be reported and punished. A properly devised code of conduct would become an instrument to assure that if the inspectors do everything properly, then the host state would have no excuse for mistreating them.

Minimizing the nuisance factor could be accomplished by replacing human observation and measurements with dependable technical means. In some cases, the IAEA already applies remote containment and surveillance on stores of nuclear material to ensure that the material is not moved or transported without notification. The CTBTO relies on remote-sensing technologies to alert the world if it has detected an activity that seems to be a nuclear explosion.

If more resources are devoted to the development and deployment of additional technical means of verification, the degree of intrusion could be reduced by a significant degree. The remaining issue would be the assurance of credibility and the capacity of the technical means to replace the "human

touch” of inspections. Without this credibility, both the inspected state and the verification regime would suffer: the inspected state would be unable to convince the verification organization of its honesty, and the organization would have trouble convincing skeptics of its capacity to do a credible verification job.

The Justified Apprehensions of the Inspectors

Affecting the relationship between the inspector and the inspected state is the fact that inspectors often have justifiable apprehensions about their safety or their careers. A curious inspector might find that his professional activities at the Secretariat are curtailed, or even that his personal safety is in danger.

Inspected states can play upon these apprehensions. For example, in the 1980s, Iraq counted on the timidity of IAEA inspectors and their unwillingness to ask questions about activities at undeclared facilities at Tuwaiitha. Even though the inspectors were visiting facilities at the Tuwaiitha site, they had little professional motive to be curious about other activities and facilities at the site.

Many years ago, a rumor (later proved erroneous) was circulating that an IAEA inspector was killed because he got too close to uncovering illicit activities in a member state. Given a rumor such as this, IAEA inspectors fear the discovery of illicit activities, or the uncovering of a major discrepancy during a tour of duty in a member state, lest the inspected state becomes aware of these findings.

There are many other things for an inspector to be anxious about, including the dangers of radiation exposure and disease, especially in developing countries.⁴ There is no doubt that these factors handicap the inspector. The inspectors tend to “stick to the book,” and not vouch personal opinions about technical issues they were not asked about. For its part, the management level of the verification organization encourages leaving well enough alone, since otherwise contentious issues could arise.

Trust: Unless Otherwise Indicated, a Prescription For Failure

Under routine circumstances, an inspection team will usually exhibit an implicit sense of trust towards the inspected party. This sense of trust will be well founded if there have been numerous inspections in the past that have not aroused suspicions. This sense of trust could manifest itself in many small ways, culminating in ignoring telltale signs that give an indication of activities that should be further investigated.

This sense of trust evolves from the inherent wish of the inspectors, in most routine cases, to trust their hosts. Having a sense of trust makes the work easy to perform, and does not mandate that additional actions be taken. Any unnecessary deviation from the routine complicates life and could cause delays and other personal complications. Trust also helps the inspectors minimize their apprehensions.

On the institutional level, a sense of trust makes it easier for the political bodies of any verification organization to ignore signs of noncompliance. When trust exists, it is much easier to ignore the consequences of letting an inspected state get away with small discrepancies, than it is to start investigating a member state and accuse it of noncompliance.

It is not logical for trust to enter into the relationship between an inspectorate and the inspected state; the very need for a verification regime implies a degree of distrust. The maxim “trust but verify” provides lip service to the honor of the inspected state, but says nothing of the role that trust should play in the decisions or conclusions drawn during verification.⁵ Verification is an imperative: “verify, no matter what.”

Nevertheless, trust has played a role in the design and implementation of verification regimes. For example, the limitations of INFCIRC/153 are partly due to a sense of trust; otherwise the verification mechanism would have been much more extensive. Given the limitations, the inspectorate had to trust that a state’s declaration of nuclear material was, in fact, both correct and complete, even though INFCIRC/153 was in no way capable of assuring the completeness of a declaration. Similarly, the IAEA Board of Governors and General Conference did not think it necessary or wise to doubt the integrity of states beyond the verification of the contents of their declarations.

Trust also played a role in the establishment of the Model Protocol. Although the Protocol goes much further in seeking to assure that a state’s declaration is complete, the Board decided that it was not mandatory for non-weapon states to implement the Protocol. Nor has the IAEA budgeted sufficient resources to implement the Protocol.⁶ Once again, trust in the member states prevailed over implementing a strict verification regime.

Trust erodes the deterrent value of verification. When a verification organization approaches an inspected state with a sense of trust, it is more easily lulled into a sense of complacency. Under these circumstances, the inspectorate could start ignoring signs and taking shortcuts. At the same time, the inspected party could start feeling sure of itself, to the extent that illicit R&D work would be evolving onsite without any hindrance.

There are remedies to this malady. All of them depend on the degree of alertness of the inspectorate. In addition, the inspected party has to be made aware that no shortcuts will be taken and that all its activities and data will come under scrutiny. The inspected state will certainly consider the possible cost to its prestige and economy, were it to be discovered to be cheating.

Nondiscrimination

The expression “nondiscriminatory,” which is used increasingly in the mandates for negotiating new treaties, can be interpreted in two ways. The first interpretation is an expression of the fact that the treaty in question shall be applied to all states without any discrimination. For example, the CTBT is a

nondiscriminatory treaty, since its application is universal, while the NPT is discriminatory, since it differentiates between nuclear weapon states and non-nuclear weapon states.

The second interpretation is broader. Under this interpretation, the treaty's implementation, including its verification, should be applied without discrimination among the states. This is not always justified, because it assumes that all states are equally trustworthy.

The nondiscriminatory application of verification should be rejected. If it is accepted that an obvious inequality exists among nations, then we have to be discriminatory in the real world. In many ways, the world already operates this way, and the criteria used by the international community to determine whether states are "trustworthy" are easily distinguishable. For example, the way a state is characterized is noticeable in the way its opinions are received in debates, or in the way its citizens are employed in relevant international organizations. Some "trustworthy" states are forgiven for egregious actions, are never censored, and their omissions are overlooked and never mentioned. On the other hand, "untrustworthy" states will be criticized for almost anything.

Since the ultimate judgment of a treaty dispute is usually political, equality can rarely be assured. Moreover, a state's implementation of a treaty will usually be influenced by external political conditions and its relations with other states.

Unfortunately, it is not always clear-cut which states can be trusted and which cannot. The level of trust bestowed upon a state sometimes depends upon time and place. For example, Iraq was "trusted" by many in the West during the 1980s because of its military conflict against Iran.⁷ Even after suspicions grew about its nuclear ambitions following the bombing of the Osirak reactor by Israel, Iraq was trusted by many countries and international organizations (including the IAEA), while Israel was condemned.

The nondiscriminatory application of verification is problematic for other reasons. For example, nondiscrimination would have to be adjusted to the needs of the most developed states, making it cost prohibitive to apply.

On balance, nondiscrimination is not logical if we view the differences in threat perceptions, capabilities, scopes, and aims of nuclear programs in various states. To enhance efforts to achieve more perfect verification, it is necessary to develop more objective criteria for the assessment of a state's status, and the effort that should be accorded to the verification of its nuclear activities.

The Accessories are Not Liable

There are no international agreements concerning the consequences to suppliers of illicit nuclear technologies to other countries. The NPT obligates the nuclear weapon states not to transfer nuclear weapons to a non-weapons state, and not to "assist, encourage, or induce" non-weapon

states from obtaining nuclear weapons. However, there is no enforcement or verification mechanism in the treaty to ensure its compliance.

Because of the dual-use nature of nuclear fuel-cycle facilities, the transfer of sensitive facilities or technology to a country could have military implications. Because of the evident demand for illicit nuclear supplies, groups of states voluntarily convened the Zangger Committee (and later, the Nuclear Supplier's Group) to set guidelines and standards for exporting sensitive technologies. However, there is no international enforcement mechanism for either group. Rather, the guidelines rely on national control and enforcement mechanisms.

Should the Problems be Publicly Acknowledged?

States create and run verification organizations, and they should be aware of the compromises that are made in their creation and operation. In contrast, the general public is certainly not well informed about these compromises.

The reason for keeping the public in the dark is unclear. It could be that states do not wish the public to be aware of these problems, for fear that knowledge would reflect badly on the governments themselves and invite domestic political trouble. It would take bold governments and a bold international organization to admit to the public the existence of these problems. As things are today, many do not come to the public's attention.

Is this sort of behavior indicative of a wish to postpone the inevitable, hoping that the inevitable will never happen? Is it a part of a survival instinct of the verification organization? Is it a part of a will to show the constituents that all is well? The answer is probably a part of all the above. In the long run, however, admitting to the existence of these problems would help to achieve a reasonable nuclear nonproliferation regime.

¹ Source: *Merriam-Webster's Collegiate Dictionary* < <http://www.m-w.com/home.htm> >.

² Such was the case when, in February of 1999, the Director General of the IAEA, sent an "informal" "non-paper" to members of the UN Security Council in which he recommended lifting the sanctions on Iraq as an incentive to obtaining Iraq's agreeing to the resumption of IAEA Action Team and UN inspection activities. This was clearly a political and unwarranted message from the Director General of an organization's *Secretariat*. However, the Director General's communication went largely unnoticed by the political-making organs, and the Director General was never called to order.

³ The CTBTO strictly adheres to the quota system in recruiting staff to the Provisional Technical Secretariat. At the IAEA, the quota system was officially abandoned some years ago, but the system persists unofficially, in that relative representation is considered during the recruitment of new personnel.

⁴ Such apprehensions are not limited to IAEA safeguards or (presumably) CTBTO inspectors. Jere Nichols, a U.S. nuclear expert who participated on some of the earliest IAEA Action Team inspections in Iraq, remarked that "some of the rigors we were told about, and which frightened some of us, were: the temperature of 25 degrees (C) or so; the humidity; the possibility of poisonous gas remnants from the war; the possibility of unexploded bombs; snakes and scorpions; bacteria in the food and water; and spies, who searched and placed electronic bugs in our hotel rooms." See

“Uncovering the Secret Program (I)—the Initial Inspections,” delivered before *Understanding the Lessons of Nuclear Inspections and Monitoring in Iraq: A Ten-Year Review*, sponsored by the Institute for Science and International Security, Carnegie Endowment for International Peace, Washington, DC, June 14-15, 2001 < <http://www.isis-online.org/publications/iraq/nichols.html> >.

⁵ This expression later changed to the present-day “Trust *and* Verify,” which expresses a very palatable but not so worthy sentiment that states subject to verification are, in fact, trustworthy from the outset. However, connecting trust and verification both diminishes the effectiveness of the verification, and causes inherent distrust not only on the part of the “verifier” but also on the side of the inspected state, lead to diminishing transparency.

⁶ The IAEA maintains that the “Integrated Safeguards” (integrating INFCIRC/153 and INFCIRC/540 requirements) will result in net savings with no reductions in efficiency or effectiveness. This remains to be seen.

⁷ Perhaps more precisely: Iran was less trustworthy than Iraq.