

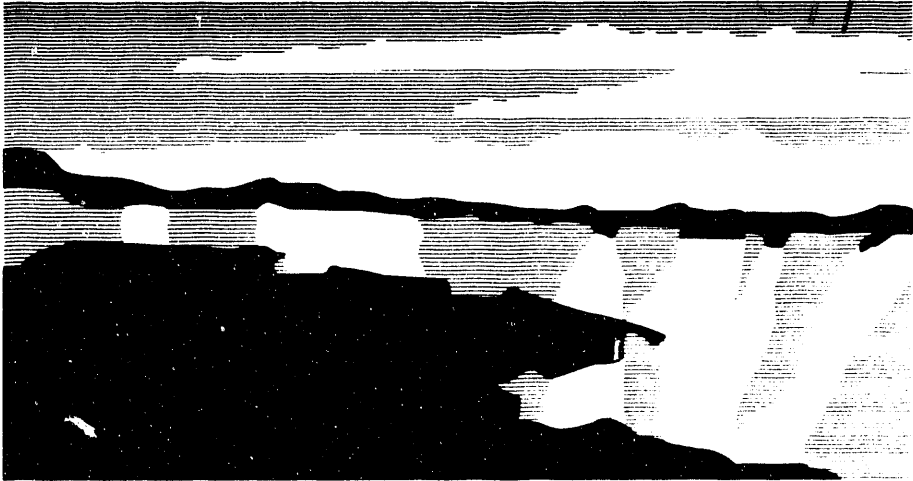
LA-UR- 93 - 2586

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Submitted to: 34th Annual Meeting of the Institute of Nuclear Materials Management, Scottsdale, Arizona, July 18-21, 1993

AUG 05 1993



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INFORMATION SOURCES FOR TRANSPARENCY MEASURES AT SENSITIVE FACILITIES*

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ABSTRACT

The concept of transparency stems from a desire to assure other parties that some action such as the dismantlement of a weapons system is taking place while avoiding the intrusiveness, complexity, and lengthy negotiations associated with formal verification measures. By their nature, transparency measures may fall short of providing the degree of confidence associated with arms control treaties, such as INF or START, but can be more quickly and easily implemented. This paper discusses information sources that could form the basis of transparency measures at sensitive facilities.

INTRODUCTION

In the post Cold War era, countries are seeking to promote better international relations by displaying a greater openness with respect to some of their national security activities. One possible source of this openness is the unilateral offer by a country of cooperative measures to demonstrate that the country is carrying out some activity. Examples of possible activities might include the retirement of provocative weapons systems such as a ballistic missile, the conversion of military facilities to civilian use, or even the cessation of production of a chemical agent precursor by a private company. In each case the country in question could offer to provide information either off-site or on-site that would provide a concerned inspectorate (either international, national or sub-national) with some assurance that these actions were taking place. In this paper these cooperative measures are called transparency measures. A key element in the definition of transparency is that the country or facility hosting the inspection maintains a degree of control over the information released.

*This work supported by the U.S. Department of Energy.

This paper primarily addresses transparency measures as described above. However, the process of a host providing information of its own choosing to an inspector is also envisioned in the Chemical Weapons Convention (CWC). The challenge inspection process in the CWC says that the inspected party "shall have

- (a) The right and obligation to make every reasonable effort to demonstrate its compliance with this Convention and, to this end, to enable the inspection team to fulfill its mandate;
- (b) The obligation to provide access within the requested site for the sole purpose of establishing facts relevant to the concern regarding possible non-compliance; and
- (c) The right to take measures to protect sensitive installations, and to prevent disclosure of confidential information and data, not related to the Convention."¹

While the challenge inspection process puts a burden on the host to convince the inspectorate that it is in compliance with the Convention, the host still has control of the information released to the inspectors. If this provision proves successful in practice, it may suggest a direction for future treaties affecting other sensitive facilities that parallels the current concept of transparency.

A significant challenge to the country making the demonstration is to provide the highest degree of assurance without sacrificing legitimate national security or proprietary information. In addition these transparency measures should not interfere with ongoing activities at a facility. The balance of this paper will first consider several criteria for judging transparency measures and then discuss some different types of information that might be available to form the basis of these measures.

CRITERIA FOR TRANSPARENCY MEASURES

Table I shows the criteria for judging transparency measures at a sensitive facility. These criteria should be applied on a site-specific basis. A measure that might provide little confidence in one site may provide a significant level of confidence at another.

TABLE I. Criteria for Judging Transparency Measures

CONFIDENCE OBTAINED

- Ability to Discriminate Declared Activities from Undeclared Activities and Normal Facility Operations
- Ability to Corroborate other Measures
- Ease of Spoofing

INTRUSIVENESS

- Risk of Information Loss
- Impact on Facility Operations

COST

- Cost to Facility
- Cost to Inspectorate
- Cost to Inspected Nation

The criteria in Table I are divided into three groups: confidence, intrusiveness, and cost. Confidence reflects those characteristics that determine how much assurance an inspectorate will receive from the measure. A measure that just indicates general activity at a facility does not give as much assurance as a measure that indicates that the activity is directed at a particular goal. Because many transparency measures by themselves may provide little confidence, the ability of measures to jointly enhance confidence is quite important. Also important is the ease with which the inspected party can falsify a signature to indicate that one thing is being done while something else is being declared.

The intrusiveness criteria address one of the problem areas that could be associated with a transparency regime. Great care must be exercised that a transparency

measure does not give up sensitive information. Indeed, this is the clearest adverse impact associated with transparency measures. In this context, one usually thinks in terms of national security information. However, the proprietary information of a private company can be of similar sensitivity in the global marketplace. In addition, it must be remembered that the facility under scrutiny has a mission other than being the subject of inspection. Transparency regimes can seriously impede the functioning of a facility.

While the intrusiveness criteria capture the non-monetary costs of transparency measures, there are several monetary costs associated with transparency measures. For example, there are the expenses associated with conducting a physical inspection. These costs may be borne by the host facility, the inspectorate, and the host national government. A measure that requires the expenditure of large sums of money to implement clearly will not be as attractive as one that can be done more cheaply.

SOURCES OF INFORMATION

As indicated by several criteria, the key feature of transparency is the transfer of information from one party to another. Therefore, one way of categorizing transparency measures is by the sources of this information. The categories adopted in this paper are declarations, limited independent observations, limited independent measurements, and comprehensive independent observations and measurements. These categories are listed in the order of generally increasing intrusiveness, but also in order of generally increasing confidence. However, as stated above, these criteria need to be applied on a site-specific basis.

Declarations include many different types of information that could be released by and about a facility. A common thread for declaratory information is that the release is strictly unilateral by the inspected party with no independent verification. The only way the inspectorate can check on the validity of the data is through cross correlation of different declarations or by using information external to the transparency regime (National Technical Means, etc.). The most important declaration is the initial disclosure made by the host government or facility that describes the activities at the inspected facility. This constitutes the benchmark against which the results of the transparency regime will be measured.

Declarations may be further divided into two categories, those that a facility is already making and specially prepared declarations derived from current facility information sources. Among the declarations a facility may already be making are news releases on activities to the local or national media and reports to local, state, and federal government agencies. The latter group would include environmental and safety-related submissions. For publicly held companies, there are also stockholder reports and, in the U.S., submissions to the Securities and Exchange Commission.

A facility would also have available many other types of internal reports that would not normally be released to an outside party. These include personnel and financial records. Whether these would ever be made available as part of a transparency regime is quite problematic. However, they do exist and may be available under some circumstances.

Particularly with modern industrial information systems, it becomes quite easy to generate custom reports on a facility's activities. The data systems involved include normal inventory records, records of sales and purchases, other financial records, and for facilities handling nuclear material, the safeguards system. The greater problem for this type of source is deciding what information to release and what to protect. Although it is relatively easy to decide if an individual piece of information is sensitive, it becomes much more difficult to decide if information in combination may reveal too much.

The means of delivering declaration information could be quite varied. The simplest would be hard copy sent to the inspectorate in its home country. Other possibilities include the use of electronic media such as video tapes and disks. The information could also be delivered as part of a tour of the facility as described below. One intriguing possibility, if security arrangements could be made, is to allow an inspector limited electronic access to a facility's databases from a terminal either in the host country or in the inspector's home country.

Limited independent observations essentially provide information an inspector can obtain with unaided senses, possibly augmented with closed-circuit video cameras. The biggest issue here is how close to the facility an inspector would be allowed to come. Limits might be placed at a perimeter, or the inspectors might be taken on a guided tour of certain parts of the facility.

The most intrusive regime would allow escorted, but free, access to predefined facility areas. Another means of limiting access is to control the times when the inspector has access to the facility. The use of real-time video cameras would allow the inspectors to see areas that they could not be admitted to for safety or security reasons. The information that an inspector could obtain includes the general configuration of the facility, possibly the types of major equipment, some information about the number of people working at the facility and the number of shifts, and observations of the number and types of vehicles entering and leaving the facility. Also, observations could be made of the infrastructure of the facility (for example, roads, rail lines, and electrical service). A more intrusive form of observation of vehicular traffic would be to allow a limited number of visual inspections of the contents of vehicles entering or leaving the facility.

The limited independent measurement option would allow the inspectorate to augment their observations by using strictly controlled equipment on-site to confirm activities declared in a database. Examples might include radiation-based measurements of nuclear material in storage, chemical analysis at a potential chemical production site, and the use of portal monitoring equipment. The challenge here is for the inspected party to strictly control what is being measured to prevent the inadvertent loss of sensitive information. The easiest way to do this is for the host to provide the required measurement systems while allowing the inspectorate to verify the operation with authentic samples brought to the site. It should be recognized that even these measures may not totally alleviate the concern that the inspector is being fooled. Observations allowed under the Open Skies agreement provide one example of limited independent measures that are currently being implemented for transparency purposes.

The last category of information sources is that of comprehensive, independent observations and measurements to confirm the technical operation of specific declared processes. This type of regime would allow tremendously intrusive access by the inspectorate to a facility. This would go far beyond the range of measures usually included under transparency because the host party would lose control of the information being released. Therefore, implementation would require the very carefully crafted inspection protocols usually associated with full-scale treaty verification.

CONCLUSION

Sensitive facilities, particularly in the United States, have a number of readily available information sources that could be used as part of transparency regimes. In general, it would appear that the more intrusive a measure is, the greater the confidence provided to an inspectorate. However, this relationship does not always hold and must be decided on a site-specific basis. The hardest problem associated with transparency regimes may be for a host country to decide what information it wants to protect and what it can allow to be released. This puts an emphasis on beginning to plan transparency regimes well before they will be implemented to avoid the inadvertent compromise of sensitive information.

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