

# The voluntary safeguards offer of the United States

*A review of its history and implementation*

by Frank S. Houck

During negotiations of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) concerns were expressed by non-nuclear-weapon States that their acceptance of Agency safeguards would put them at a disadvantage vis-à-vis the nuclear-weapon States.

To allay these concerns, the United States and the United Kingdom in December 1967 made voluntary offers to accept Agency safeguards on their peaceful nuclear activities. Subsequently, France made a voluntary offer, the safeguards agreement for which was approved by the IAEA Board of Governors in February 1978, with a view to encouraging acceptance of Agency safeguards by additional States. More recently, in February 1985 the Board approved the safeguards agreement for the voluntary offer of the USSR, made *inter alia* to encourage further acceptance of Agency safeguards.

These safeguards agreements with nuclear-weapon States have two important features in common: Namely, they result from voluntary offers to accept safeguards rather than from multilateral or bilateral undertakings, and they give the Agency the right but generally not an obligation to apply its safeguards. The agreements differ in certain respects, the most noteworthy of which is the scope of the nuclear activities covered by each offer. The agreements of the United States and United Kingdom are the broadest, covering all peaceful nuclear activities in each country.

The safeguards agreement for the US voluntary offer has been in force since December 1980. Now is an appropriate time to review the experience with the agreement's implementation during its first four years, as well as its history and salient features.

## **Safeguards implementation: Agencies involved**

One of the first actions taken by the United States in preparing for implementation of the agreement was to establish an inter-agency mechanism within the US Government to deal with implementation.\* This action

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\* *Federal Register*, Public Notice 759, Vol. 46, No. 105 (June 2, 1981).

was required by the US Senate as one of the understandings to which its advice and consent to ratification were subject due to concern with the complexity of the administrative and legal relationships among the relevant Government agencies. The mechanism established consists of three inter-agency organizations and procedures specifying their responsibilities and those of the individual agencies.

The organizations are (1) an Inter-agency Steering Group for International Safeguards (ISG) responsible for co-ordinating policy and resolving any disputes within the government; (2) a Safeguards Agreement Working Group (SAWG) responsible for monitoring implementation of the agreement and carrying out assigned working level activities associated with implementation; and (3) a Negotiating Team responsible for negotiating with the IAEA the subsidiary arrangements, i.e., the attachments for facilities selected by the Agency.

Each of these groups includes representatives of the US Department of State, which chairs each group; the US Department of Energy (DOE), which owns the license-exempt facilities on the eligible list; the US Nuclear Regulatory Commission (NRC), which regulates the licensed facilities (about 200 of the eligible facilities); and the US Arms Control and Disarmament Agency, which provides advice and technical assistance.

In addition, the ISG includes representatives of the US National Security Council staff and, for determining changes to the eligible list, the US Department of Defense. The procedures also provide for interactions of facility operators and the IAEA through the appropriate US Government agency and for a role by the operator of a licensed facility in the development of its facility attachment.

Despite the number of US agencies having responsibilities relevant to implementation of the agreement and the complexity of the inter-relationships of their responsibilities, these inter-agency organizations and procedures have worked rather well. The large majority of actions are carried out by the individual responsible agencies. Most of the effort of the SAWG has been to monitor implementation, with its additional work relating primarily to improving the US procedures for providing the accounting reports to the Agency. There has been only infrequent need for actions by the ISG.

The San Onofre nuclear generating station in California, one of the US facilities where safeguards are being applied under the US voluntary offer agreement. (Photo: Southern California Edison Co.)

A second organizational arrangement made to facilitate implementation was establishment of annual meetings between the Agency and the United States, specifically the SAWG, to review progress in implementation and to deal with any matters arising in implementation that could not be resolved routinely.

The US/IAEA safeguards agreement does not provide for any joint US/Agency body but does include the standard provision, under which these annual meetings are held, for consultations at the request of either party. The first of these meetings was in June 1983. The main subjects of discussion have been accounting reports, Agency statements on inspections, and procedures for expediting negotiations of facility attachments.

### **Implementation experiences**

The experiences with the agreement's implementation that have required most attention by the US Government involve negotiation of facility attachments, accounting reports, and Agency inspections. To understand most of these experiences, it is necessary to understand a key aspect of the agreement, namely that eligible facilities selected by the Agency under the agreement are subject to the full regime of safeguards; facilities selected under the protocol are required to submit design information (and receive visits by Agency inspectors to verify it), maintain records, and submit reports; and facilities that are not selected by the Agency are not subject to any of the provisions of the agreement or protocol. US licensed facilities operate under an extensive system of NRC regulations (license-exempt facilities are under comparable DOE controls) that pre-dates the agreement. Special regulations (or controls) apply to facilities selected by the Agency, but only after they have been selected. (For a fuller discussion of the protocol and agreement, see the box on page 17.)

Perhaps the most vexatious of the experiences are the delays encountered in bringing into force facility attachments. The delays do not arise generally from any differences of substance, but rather from the process itself leading from facility selection to entry into force of the facility attachment.

Until the Agency has informed the United States of a selection, the process of preparation by the facility of the design information does not begin. Earlier consideration was given to requesting design information from all eligible facilities, but, after having tried this approach with the license-exempt facilities, it was judged both inefficient and ineffectual. Because it is at least a number of years before most eligible facilities are selected, design information prepared when a facility became eligible would be out of date for most facilities by the time of selection.

### **An educational process**

Although the operators of eligible facilities know they are subject to selection, few understand Agency safeguards or are prepared for selection. Thus, with

each selection the education process begins anew. It was originally envisaged that facilities might be first selected under the protocol and subsequently under the agreement — a procedure that would facilitate entry into force of the attachments for facilities selected under the agreement. This selection sequence has not happened so far, although in the future the problem may be eased now that all plants which fabricate fuel for light-water reactors (LWR) have been selected under the protocol.

With the exception of the facility attachment for the Gas Centrifuge Enrichment Plant (GCEP), now under negotiation through formal meetings, the negotiations of facility attachments have, for the most part, been conducted through the US Mission, with the Agency proposing a draft and with the United States proposing changes to it but without jointly establishing a due date for the next draft. This has proved to be a very slow process. The United States and the Agency are exploring ways to initiate preparation of design information questionnaires and of draft facility attachments prior to the formal notification by the Agency of selection.

### **Accounting reports**

The aspect of implementation that has probably required the most attention, both within the United States and in interactions with the Agency, is submission of accounting reports.\* Most of this attention results from the fact that the United States has an extensive national materials accounting system — the Nuclear Materials Management and Safeguards System (NMMSS) — that predates the agreement and differs in some fundamental respects from the Agency's data system.

Since the NMMSS is much more encompassing than the reporting requirements under the agreement, it was not practical to modify the entire domestic system to conform to the agreement. Instead, the approach taken was to develop new regulations and directives that would modify the existing domestic reporting requirements to satisfy the agreement's reporting requirements as well and to apply them only to eligible facilities and only after their selection.

Thus, facilities selected by the Agency become subject to special procedures for submission to the NMMSS of accounting data needed to satisfy both Agency and domestic information requirements. The NMMSS then generates the required Agency accounting reports, which are submitted to the Agency on computer tape, on the basis of the data reported by the facility.

Meeting these combined requirements introduces complexities, particularly for bulk-handling facilities, both for the operator and for Agency inspectors when they attempt to compare facility records with

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\* See "The Evolution of US Reporting to the IAEA," by Theodore S. Sherr, paper prepared for the 10th IAEA Workshop Seminar on Safeguards Information, November 19–21, 1984 in Vienna, Austria.

reports received by the Agency. These complexities have lead the operator of one facility to recommend that selected facilities submit two sets of reports, one with the data and format to satisfy domestic needs and a second to satisfy Agency reporting requirements. The experiences of other facilities will be monitored before a decision is made on this recommendation.

### Differences in data systems

A second type of reporting difficulty involves the interface between NMMSS and the Agency safeguards data system. Difficulties experienced with the data elements include delays and errors in operator reporting to NMMSS, incorrect reporting of shipper-receiver differences, the formatting of corrections to previous reports, and inclusion in reports to the Agency of data needed by the domestic system but not needed by the Agency. These difficulties, many of which have probably been experienced by others, have gradually been overcome through improved procedures for data handling and transmission, revised instructions to facilities, and modifications to computer software.

One difficulty in particular involves other countries, namely the problems encountered by the Agency in matching the reports by shippers and receivers of international transfers. This problem is regularly singled out in the IAEA Safeguards Implementation Reports and has been the subject of a series of Agency meetings.

During 1984 the United States undertook to help solve this problem by working directly with each trading partner. The transfers unmatched by the Agency are examined individually, and the data needed for matching are identified and provided to the Agency. This process has worked, and we hope it will help solve this problem generally.

### Inspections conducted

Although negotiations and reporting are among the many essential aspects of safeguards, it is the inspections that distinguish safeguards from other international institutions. The opportunity for Agency inspections was clearly at the core of the voluntary offer. The manner in which inspections are actually carried out is the aspect of safeguards that raises the most public interest. It is the opportunity to understand better the inspection process and to contribute to its improvement that is the basis for technical interest within the United States in the implementation of the agreement.

Routine inspections conducted at the Exxon fabrication plant consisted of a physical inventory verification (PIV) each year, involving an average of 34 man-days of inspection, and interim inspections at intervals of roughly two-and-a-half months involving an average of five man-days.

Inspections typically included records audit; verification of uranium hexafluoride cylinders for weight using a load cell, and for enrichment using a germanium

detector, multi-channel analyser, and an ultrasonic thickness gauge, with sampling on a limited basis of uranium hexafluoride gas in the first processing vessel; verification of uranium oxides by observing the weighing by the operator, non-destructive analysis (NDA) measurement with a SAM-2 enrichment meter, and sampling for destructive analysis at the Agency laboratory; verification of fuel pellets by weighing and sampling for destructive analysis; verification of the contents of fuel rods with the operator's active rod scanner; and verification of the fissile density of fuel assemblies with the neutron collar, an active NDA instrument. All of the verification measurements are done on the basis of random sampling plans.

Routine inspections at the LWRs have been conducted at two-month intervals involving from one to six man-days. The annual average has been 20 man-days at the Rancho Seco reactor and 25 at Trojan, the latter effort being higher because some facility records are kept at a separate location at utility headquarters. Inspections typically involve a records audit, verification of seals on the reactor pressure vessel, and servicing of the surveillance cameras in the spent-fuel storage area. Verification during the PIV has been by item counting, identification, and NDA (the neutron collar for fresh fuel and Cherenkov radiation detector for spent fuel). Identification and NDA are done on the basis of random sampling plans.

At the smaller Argonne plutonium storage facility in Illinois, routine inspections – usually involving one man-day – were carried out twice a year.

While the Gas Centrifuge Enrichment Plant (GCEP) at Portsmouth has not yet begun routine operations, negotiations on the facility attachment were initiated in November 1984 and are expected to be completed in the near future. Agency *ad hoc* inspections began when nuclear material was first introduced into the plant and are continuing. Inspectors have had access to the cascade halls several times.

The safeguards approach for gas centrifuge enrichment plants, including the plant at Portsmouth, was developed by the Hexapartite Safeguards Project (HSP), comprised of the inspectorates of the Agency and Euratom, and representatives of Australia, Japan, the Federal Republic of Germany, the Netherlands, United Kingdom, and United States.\* One of the most significant accomplishments of the HSP was development for this advanced type of facility of an effective safeguards approach that provides for radiation monitoring and visual inspection of the cascade halls to verify that the plant is producing only low-enriched uranium as declared in the design information, while protecting the industrial and other sensitive information about the design and operation.

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\* For further discussion, see "Safeguards Approach for Gas Centrifuge Type Enrichment Plants," edited by Joerg H. Menzel, *Journal of the Institute of Nuclear Materials Management*, Vol. 12, No. 4 (Winter 1983).

### Improvements achieved, problems managed

The United States has sought to use safeguards implementation in its facilities as an opportunity to help improve safeguards. It has been necessary, however, to ensure that this implementation is not converted into an R&D exercise, since the agreement requires the same procedures in US facilities as in similar facilities elsewhere.

Nonetheless, it has been possible to achieve valuable improvements in inspection procedures and equipment through implementation of the agreement. These include use at the fuel fabrication plant and at reactors of the neutron collar for measuring the fissile content of low-enriched uranium fuel assemblies; use of the operator's fuel rod scanner at a fabrication plant in conjunction with verification of standard rods (rejects or surplus) by downloading followed by pellet weighing and sampling; improvement in the design of the load cell weighing device for uranium hexafluoride cylinders so that cylinder weights can be verified without moving the cylinder from its storage location; and efficient procedures for PIVs that avoid delaying resumption of production.

There have, of course, been problems for Agency inspections that have had to be dealt with. For example, difficulties were encountered in clearing Agency safeguards equipment through US Customs, until an old (1957) customs regulation was uncovered exempting the Agency from these customs requirements. There have been and probably always will be inconveniences to Agency inspectors resulting from last minute changes in plant operating schedules, but we have sought to improve the procedures for notifying the Agency of these changes. There are differences in the health and safety procedures among US facilities. In one case US Government attention was needed to ensure a reasonable balance between providing for the health and safety of Agency inspectors while in the facility and ensuring that their rights of access are not thereby hampered.

### Total effort and costs

Total Agency inspection effort in the United States has been close to 100 man-days a year. This corresponds to approximately two man-years based on the Agency average of 50 man-days per regular inspector based in Vienna.

The cost to operators of US facilities has been estimated so far only by Exxon, which has estimated its cost resulting from Agency inspections to be about one-tenth of one per cent of fuel fabrication costs. This low cost was achieved only by a high degree of co-operation between the operator and the Agency inspectors.

Lost production time, for example, was minimized while still ensuring effective verification of the physical inventory by close co-operation. The physical inventory taking was started by the operator just before the

normal weekend break in production. As the operator completed taking his inventory in each area of the plant, he provided his listings to the inspectors who immediately started their verification area by area. By working the evening and the weekend, inspectors were able to complete their verification without causing a delay in the resumption of production.

This and other procedures enabled the inspectors to complete their inspection activities with a minimum time in the production areas and, hence, with a minimum time spent by plant personnel in escorting inspectors and in handling nuclear material for Agency verification measurements.

Probably the most important conclusion to be drawn from experiences with safeguards is the indispensability of this close co-operation. Co-operation by the operator is not a passive role. Rather, it is an active role wherein the operator uses his understanding of his plant and its operations to help the Agency identify efficient and effective measures for achieving the inspection objectives, and co-operates with the inspectors to facilitate the conduct of these measures. By this approach the costs and burdens are minimized for both the operator and the Agency.

### Public information reports

It is a general view in the United States that Agency safeguards will in the long run benefit from wider dissemination of information on Agency safeguards and from the resulting enhanced understanding of these safeguards. Accordingly, one early step taken by the United States was public dissemination of the general part of the subsidiary arrangements to the agreement. Consideration has been given to similar treatment of the facility attachments, but this action has not been taken to date.

Because the available safeguards literature has generally been lacking in descriptive information on how Agency safeguards are actually carried out in practice, the Arms Control and Disarmament Agency contracted with the Exxon Nuclear Company to document for publication the implementation of Agency safeguards at the Exxon fuel fabrication plant. The contract also supported presentations by Exxon staff on their experiences with Agency safeguards at the 1982 annual meeting of the Institute of Nuclear Materials Management and the 1983 Symposium of the European Safeguards Research and Development Association.\* A demonstration of Agency safeguards at

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\* See "An Operator's Experience and Lessons Learned in Implementation of IAEA Safeguards," by Roy Nilson and Richard Schneider, paper presented at 23d Annual Meeting of Institute of Nuclear Materials Management, Washington, DC, July 18-21, 1982. Also, "Implementation of IAEA Safeguards at a US Fuel Fabrication Plant," by Richard Schneider, Roy Nilson, and E.R. Herz, paper presented at ESARDA Fifth Annual Symposium on Safeguards and Nuclear Material Management, Versailles, France, April 19-21, 1983.

the Exxon plant was made to the IAEA Standing Advisory Group on Safeguards Implementation (SAGSI) in April 1984. The full report by Exxon on Agency safeguards at its plant was distributed in April 1985.\*

Combustion Engineering is also under contract to prepare a report on its experiences with Agency safeguards at its fuel fabrication plant. This report is expected to be available in 1986.

### Summary: Benefits of implementation

The US voluntary offer accomplished its purpose of gaining acceptance of Article III of the NPT and thereby of facilitating negotiations and entry into force of the NPT.

\* *Documentation and Analysis of IAEA Safeguards Implementation at the Exxon Nuclear Fuel Fabrication Plant*, report prepared for US Arms Control and Disarmament Agency (October 1984).

The fulfilment of the offer has been accomplished, through the selective features of the agreement and its protocol, at an acceptable cost in Agency resources.

Implementation of the offer has enabled the United States to gain a significantly better understanding of the practical realities of safeguards.

The experience confirms US expectations that Agency safeguards can be implemented in commercial fuel cycle facilities without undue interference in their operation and without compromising industrial and trade secrets, that the cost is a quite small percentage of the operating costs of these facilities, and that the key to these accomplishments is a high level of co-operation between the Agency and the facility operator.

An additional benefit from implementation has been improvements in safeguards technology through the practical experiences with safeguards procedures and equipment in operating facilities.

### The offer's history and scope

During the extended negotiations of the NPT, a concern arose among non-nuclear-weapon States that Agency safeguards might place them at a commercial and industrial disadvantage relative to the commercial nuclear activities in the nuclear-weapon States, since the latter would not be required to accept safeguards under the NPT.\* This concern was that IAEA inspection would impose a serious economic burden through interference with the efficient operation of commercial activities — resulting in increased operating costs — and through compromising of industrial and trade secrets. There was at that time little Agency experience in safeguarding commercial nuclear activities to show whether these concerns were unfounded.

In an effort to overcome the obstacle, which the safeguards issue had become, to acceptance of the NPT, President Johnson on December 2, 1967 made the voluntary offer, saying (italics added):

*"I want to make it clear to the world that we in the United States are not asking any country to accept safeguards that we are unwilling to accept ourselves.*

*"So I am, today, announcing that when such safeguards are applied under the treaty, the United States will permit the International Atomic Energy Agency to apply its safeguards to all nuclear activities in the United States — excluding only those with direct national security significance.*

*"Under this offer the Agency will be able to inspect a broad range of US nuclear activities, both governmental and private, including the fuel in nuclear power reactors owned by utilities for generating electricity, and the fabrication, and chemical reprocessing of such fuel."*

The importance of this offer and that made by the United Kingdom in gaining acceptance of the NPT was emphasized in public statements by key industrialized countries.

The offer coupled the timing of its implementation to the application of NPT safeguards in the non-nuclear-weapon States. Accordingly, the US/IAEA safeguards agreement was submitted to the Agency's Board of Governors for its approval in September 1976 in anticipation of entry into force of the NPT safeguards agreements with the European Community (February 1977) and with Japan (December 1977). The US/IAEA agreement was initiated in November 1977 and submitted in February 1978 to the US Senate, which gave in July 1980 its unanimous advice and consent to ratification as a treaty. It was ratified by the US President shortly thereafter and entered into force the following December.

### Basis of agreement

The US/IAEA safeguards agreement (which has been reproduced in INFCIRC/288) is based on INFCIRC/153, and most of its articles — in particular the provisions for records, reports, and inspections — are identical to those in the NPT safeguards agreements of non-nuclear-weapon States. To stress the intent that Agency safeguards in US facilities be the same as in non-nuclear-weapon States, Article 3(c) specifies that in applying safeguards in US facilities the Agency will use the same procedures used in applying safeguards on similar material in similar facilities in NPT non-nuclear-weapon States.

There are, of course, differences reflecting the specific features of the US voluntary offer. The offer covers all nuclear activities in the United States, excluding only those with direct national security significance. This feature is reflected in Article 1 of INFCIRC/288, under which the United States is responsible for providing the Agency with a list of all US facilities not associated with activities of direct national security significance to the United States, and for keeping this list up-to-date. This

\* *The International Atomic Energy Agency: Application of Safeguards in the United States, An Analysis of the Agreement and an Assessment of the Negotiation*, report prepared for the US Senate Committee on Foreign Relations (May 1979).

list, referred to as the "eligible list," currently contains some 250 private and Government-owned facilities, including all commercial fuel-cycle facilities except the gas diffusion enrichment plants, which have direct national security significance. The list does include the Portsmouth Gas Centrifuge Enrichment Plant (added to the list in July 1983), all commercial nuclear power reactors, the facilities that fabricate fuel for these reactors or for export, about 80 research and test reactors and critical assemblies, and some 30 other facilities.

One of the most distinguishing features of INFCIRC/288 is that the Agency is provided the right, but not an obligation, to apply safeguards in any or all of the eligible facilities. The authority to decide how many facilities and which facilities to select rests solely with the Agency. The agreement places no restrictions on the Agency's selections, although there is recognition in the preamble of the desirability of not spending more Agency resources than necessary to accomplish the purpose of the agreement. The only role that the United States has in the selection process is the mutual agreement provided for in Article 2(c) that the Agency's selections avoid discriminatory treatment as between US commercial firms similarly situated.

#### The protocol, other features

During the 1970-71 meetings of the IAEA Safeguards Committee that developed INFCIRC/153, there were informal discussions of ways to implement the voluntary offers at a reasonable cost while still achieving the purpose of the offers. From these discussions emerged the suggestions that safeguards under the voluntary offers be concentrated on facilities of advanced design incorporating new technology and on facilities involved in international competition, and that a lesser regime, referred to as "random" inspection, be applied to all other facilities.

The first suggestion led to an approach, incorporated into the general part of the subsidiary arrangements to INFCIRC/288, wherein Agency selections would be rotated among the facilities in each class. The second suggestion ultimately led to the protocol in INFCIRC/288. Under the protocol, the Agency has the right to select from the eligible list facilities that are to meet the records and report requirements but not be subject to inspections. This two-tier selection arrangement was adopted to provide the Agency with sufficient flexibility in implementing the agreement so as to achieve the objective of the US offer at the minimum cost in Agency resources.

Subsidiary arrangements including the associated facility attachments are prepared for facilities selected for safeguards by the Agency under the agreement. Transitional subsidiary arrangements, including transitional facility attachments, are prepared for facilities selected under the protocol. References in this article to subsidiary arrangements generally encompass transitional subsidiary arrangements as well.

#### Agency selections of US facilities

In February 1981 the Agency made its initial selections, designating for the application of safeguards the low-enriched-uranium (LEU) fuel fabrication plant of the Exxon Nuclear Company at Richland, Washington; the Rancho Seco light-water reactor (LWR) in California; and the Trojan LWR in Oregon. These are all privately

owned, i.e., licensed, facilities. A consideration in selecting these particular LWRs was their location in the same general area as the Exxon plant, thereby permitting efficiency in conducting inspections. These facilities remained under safeguards until November 1983 when they were deleted by the Agency from the list of facilities selected under the agreement. At that same time the Agency selected the Exxon plant, but not the two reactors, under the protocol.

During July 1983 the Agency had selected three other licensed facilities for the application of safeguards: the Combustion Engineering LEU fuel fabrication plant in Connecticut, the Arkansas-II LWR in Arkansas, and the San Onofre (Unit 2) LWR in California. These Agency actions demonstrate the approach of selection on a rotating basis among facilities in a class in order to avoid discriminatory treatment of commercial firms similarly situated. A consideration in selecting these particular reactors was that their fuel is manufactured at the Combustion Engineering plant.

In the meantime, the Agency had begun the process of selecting additional facilities under the protocol. These selections, which have involved only LEU fuel fabrication plants, were the Babcock and Wilcox plant in Virginia and the Westinghouse Electric plant in South Carolina, both selected in July 1983, and the General Electric plant in North Carolina selected in December 1984. Currently, all US facilities fabricating low-enriched-uranium LWR fuel assemblies are selected under either the agreement proper or its protocol.

#### US Government facilities

The first US Government-owned (license exempt) facility selected for safeguards by the Agency was a storage facility, containing a small amount of plutonium, at the Argonne National Laboratory in Illinois. This selection was made to satisfy the requirement in Article 22 of the agreement that the nuclear material being safeguarded under it be at least equivalent in amount and composition to that which would be subject to safeguards under other safeguards agreements to which the United States is a party.

In this instance, some 2 kilograms of plutonium in the United States was subject to safeguards under the safeguards transfer agreement (STA) between the Agency, Japan, and the United States (INFCIRC/119). The selection was made in August 1981 in anticipation of suspension of safeguards under the STA. Following shipment of this material from the United States, the Agency removed this storage facility from the selected list in October 1984.

In August 1983, the Agency selected a second Government-owned facility, the Gas Centrifuge Enrichment Plant (GCEP) at Portsmouth, Ohio. This facility had been added by the United States to the eligible list — although it was not yet equipped with centrifuge machines and in fact is still under construction. The Agency and the US have agreed that the provision in Article 2(c) of the agreement for avoiding discriminatory treatment among US commercial firms — which led to the procedure of selecting facilities on a rotating basis — does not apply to GCEP.

Thus, currently four US facilities (GCEP, the Combustion Engineering fabrication plant, and the Arkansas and San Onofre reactors) are under safeguards, and four additional LEU fuel fabrication plants are subject to the protocol.