

COOPERATION ARRANGEMENTS BETWEEN THE IAEA AND ABACC

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ABSTRACT

From the inception of the implementation of the Quadripartite Agreement (INFCIRC/435) the IAEA and ABACC took note of the need to coordinate arrangements for technical matters related to the safeguards inspections and set about devising and then agreeing to coordination arrangements, taking into account the specific characteristics of the organizations and of the State Parties involved.

In implementing the cooperation arrangements, the IAEA and ABACC were guided by the principle of each being able to reach its own independent conclusions, whilst concurrently, avoiding unnecessary duplication of effort.

This paper describes the present situation in the context of coordination, including in the areas of Inspection Effort; Planning, Procedures and Facility Attachments Negotiations; Mission Meetings; Exchange of Sample Analysis Results; Technical Cooperation and Training. Additionally, a brief description is given of the contents of the "Guidelines for Coordination of Routine and Ad-Hoc Inspection Activities between the Agency and ABACC" and the needs for the future.

A sound relationship has developed between ABACC and the IAEA. It stems from good will on the part of each organization; each showing a willingness to understand the professional constraints of the other and pitching meetings between the two organizations at the appropriate levels.

1. Introduction

When ABACC was established in December 1991, by the Bilateral Agreement between Brazil and Argentina [1], the Common System for Accounting and Control of Nuclear Materials (SCCC), to be administered and applied by ABACC, had already been developed in such a way as to make it compatible with a comprehensive safeguards agreement based on the INFCIRC/153. When the Quadripartite Agreement (INFCIRC/435) [2] was signed by Argentina, Brazil, IAEA and ABACC, the relevant elements of the agreement took into account the existence of the SCCC. The organization of ABACC, the characteristics of its safeguards system and its inspection system have been described elsewhere [3, 4, 5, 6, 7].

The Quadripartite Agreement, which entered into force in March, 1994, calls for close coordination between IAEA and ABACC. While avoiding unnecessary duplication of effort, it enables each organization to fulfill its responsibilities and to be able to reach independent conclusions. Table 1 gives details about nuclear installations in Argentina and Brazil.

Every effort was made by the Parties, during the discussion of the General Part of the Subsidiary Arrangements, to reflect faithfully the provisions of the Safeguards Agreement in INFCIRC/435. Amongst other things, a code providing for "Arrangements between ABACC and the IAEA for cooperation in the application of safeguards under the Agreement" was included in the Subsidiary Arrangements. The IAEA and ABACC agreed from the start on the need to coordinate arrangements for technical matters related to the implementation of safeguards approach and inspections, even though it took some time to formulate specific written guidelines to cover such matters.

In devising and now implementing cooperation arrangements, the IAEA and ABACC have been guided by the following principles derived from the Quadripartite Agreement:

- the need for ABACC and the Agency each to reach its own independent conclusions;
- the need to coordinate the activities of ABACC and the Agency to the fullest extent possible for the optimum implementation of the agreement, and, in particular, to avoid unnecessary duplication of effort;
- ABACC and the Agency working together, wherever feasible, and in accordance with compatible safeguards criteria of the two organizations;
- the need to enable the Agency to fulfill its obligations under the Agreement, taking into account, inter alia, the requirements for preserving technological secrets.

Meetings are held between the IAEA and ABACC during each year to discuss coordination. Specific meetings with the State Party concerned or

quadripartite meetings are held at different levels as necessary for the issues in question.

2. Coordination of Inspection Effort

The IAEA and ABACC devote considerable time to rationalizing inspection schedules, discussing activities to be performed during inspections and, as needs arise, to seek agreement on special procedures to be followed at certain nuclear facilities. Taken into account, in this respect, are such considerations as the operational programme of the relevant facilities, the dates of physical inventory taking (PIT), technical constraints set by the safeguards approach at specific facilities, IAEA or ABACC criteria, the timing of IAEA inspections in other countries of the region and different holidays periods.

Even though only two formal meetings are held during each year between the Operation Areas of the IAEA and ABACC, aiming at discussing in advance the inspection planning and scheduling for the future six months, the two areas keep in close contact at least weekly and sometimes daily when required by a complex work schedule [8] or in order to deal with very last moment modifications, that come up because of operational problems or non previewed activities. A draft of procedures for this common planning work is ready to be approved, although there has been good understanding and cooperation between the IAEA and ABACC in the area of inspection planning and scheduling for the last three years.

3. Coordination at Planning Level

ABACC and the IAEA meet twice a year to discuss issues of safeguards implementation and coordination. These meetings focus on issues as ad-hoc procedures for sensitive or complex facilities, progress on resolving technical issues through the mechanism of working groups, the amount of inspection effort, the status of Facility Attachments negotiations, channels of communication, technical cooperation agreement, and more recently, the implementation of measures deriving from the Strengthened Safeguards System. Additionally, meetings address matters arising from previous minutes, including the Liaison Committee provided for in the Protocol of the Quadripartite Agreement.

An important result of such work was the “Guidelines for Coordination of Routine and Ad-Hoc Inspection Activities between the Agency and ABACC”, coordination arrangements for IAEA/ABACC inspections[9]. This document has been agreed by both agencies and part of it is already in use during the inspections performed jointly.

3.1. Guidelines for Coordination of Routine and Ad-Hoc Inspection Activities between the Agency and ABACC

The purpose of these Guidelines is to reflect requirements of the Quadripartite Agreement in so far as they relate to the coordination of ABACC and Agency activities with the aim of contributing towards the optimum implementation of the Agreement. The Guidelines consist of:

- a) general considerations guided by the following principles:
 - preserving the principle of each organization being able to draw its own, independent conclusions;
 - avoiding to the extent of possible, duplication of effort whether in manpower and/or equipment;
 - the need for each organization to keep the other informed about their respective safeguards criteria and subsequent modifications thereto;
 - common use of equipment and standards, which extends to the development and procurement of equipment, to procedures, to acceptance criteria and to the maintenance of equipment;
 - sharing the cost of common use equipment and standards equitably and as agreed between ABACC and the IAEA and,

- b) specific coordination arrangements.

The Guidelines provide an initial basis for coordination activities between the two agencies. They are to be reviewed and amended, as appropriate, in the light of changing circumstances and developments, e.g. safeguards measures, the developing of ABACC, the need of appropriately to apportion the financial burden of shared activities.

A next step is to formulate a detailed procedure for each of the equipment (e.g. Cobra Seals, Containment and Surveillance Systems, Bundle Counters, Neutron Collar, Ion Fork Detector, Spent Fuel Verifier, Underwater Telescopes, Active Well Coincidence Counter and others) used by both Organizations. Pending approval of such procedures, some measurement results are already being shared and discussed even though this is just the first step.

3.2. Working Groups

Another significant development emanating from coordination was the establishment of a dedicated Working Group to discuss the safeguards approach at the Embalse Nuclear Power Plant. A key objective is to optimize the safeguards approach so as to improve the overall effectiveness and efficiency of the applied safeguards, in general and in particularly with regard to spent fuel transfers to the canisters. The task of this group is not only to analyze current situation, trying to reduce the inspection effort but also to investigate new

safeguards technologies such as unattended and remote monitoring systems, operator assistance and supplementary surveillance measures.

A project related to the testing of remote monitoring for spent fuel transfers, from the pond to the canisters, with the participation of ARN (National Board of Nuclear Regulation from Argentina) and the U.S. Department of Energy is being developed and will be tested in the near future. The details of this system are being followed by the IAEA and ABACC which are providing the necessary requirements in order to permit such a system to be used for safeguards application.

4. Pre-Inspection Mission Meetings

These meetings are held at ABACC headquarters, at the beginning of an inspection mission in Brazil or Argentina. Participants are the ABACC and IAEA inspectors taking part in that particular mission and ABACC Operation Officers. These meetings, are considered very important in the context of avoiding implementation problems in the field. Matters discussed include detailed inspection plan and activities to be executed in each of the facilities to be inspected in the current mission, sampling plans, instrument logistics, coordination of tasks, agreement on how to proceed in the case the criteria are not exactly the same for the two agencies, agreed ad-hoc procedures with the countries and logistics to keep the inspectors in straight contact. In general, in the case of LOFs only one inspector of each agency participates of the inspection.

These discussions are frank and open. Moreover, because they precede the onset of an inspection, if there are questions involving the State Party (State Authority or facility operator) or there appears to be significant differences in the procedures to be applied, there is still time to consult with each other and with experts with view to resolving the issues in question before the inspection begins.

5. Coordination of Ad-Hoc Procedures and Facility Attachments Negotiations

Some facilities as the sensitive or complex ones call for special and detailed ad-hoc safeguards procedures in order to carry out the inspections. Much effort in bilateral (IAEA/ABACC) and tripartite discussions has been dedicated to this important subject and the provisional agreed procedures have been used commonly during the inspections.

The negotiation of Facility Attachments is progressing well. Experience has shown that a sound approach to this negotiation is to focus on issues common to most of the attachments under consideration, seeking to solve them initially in a generic way. Thereafter, attention has turned to the specific details of

each individual attachment. It is expected to have some Facility Attachments approved for both countries by the end of 1997.

6. Exchange of Analytical Results

A further area of cooperation is in exchanging the results of destructive analyses. The samples collected during inspections (for DA) are analyzed independently by ABACC and IAEA, each using their own network of laboratories. An archive sample, common for both organizations, remains under the seal of each of the Agencies, at the facilities.

Exchanging DA results obtained is helpful because the items selected for such DA sampling are the same in most inspections. A procedure for the exchange of analytical results was agreed at the Bilateral Coordination Meeting and is now being implemented.

On the other hand ABACC runs an intercomparison programme, involving the analytical capability of all its network of laboratories. This programme is going ahead with the cooperation of the Agency's Safeguards Analytical Laboratory at Seibersdorf and the New Brunswick Laboratory of the United States' Department of Energy.

7. Other Cooperation Activities

Technical discussions and exchanges of information between the two agencies, on non-destructive and destructive assay, environmental sample analysis, surveillance tape review systems and other issues has helped to solve specific technical concerns.

A Cooperation Agreement between the IAEA and ABACC [10], covering areas not expressly provided for elsewhere, has been agreed and is awaiting approval by the IAEA Board of Governors. Even in the absence of any such formal agreement, the IAEA has participated in a variety of specific cooperation activities such as training courses for ABACC inspectors and discussions at the technical support level.

8. Conclusion

A sound relationship has developed between ABACC and the IAEA in a climate of good will from both sides.

That is not, however, to say that there is no more to be done. For example, with the "Guidelines" approved, a further need is for procedures to govern the use of equipment to be shared mainly in the field. There are other issues needing attention, as discussed in this paper. Besides this fact, these

“Guidelines” are much more related to common use equipment and standards and don’t take into account other possibilities of sharing.

Major steps have been and continue to be taken in building confidence between the IAEA and ABACC. In prospect for the future are further developments in that regard, whether through seeking to resolve problems in the forums established, through improving cooperation in safeguards planning and implementation, exchanging information and participation in R&D activities and in appropriate training seminars.

Trying to understand the constraints of the other Part and keeping the appropriate technical level of the participants in each type of meetings are for sure a key for a good relationship.

For the future, considering the new policy of more rational and the strengthened of safeguards, the role of the regional agencies must be discussed[11], taking into account the experience developed by the two existing organizations at the present times [12]. The existence of regional organizations may represent an improvement in both the efficiency and the efficacy of safeguards application.

Table 1. Facilities and LOFs in Argentina and Brazil.

Type	AR	BR	Total
Conversion Facilities	5	1	6
Fuel fabrication Facilities	4	2	6
Enrichment Facilities	1	2	3
Power Reactor	2	1	3
Research Reactors	6	3	9
Critical/Sub-Critical Units	-	3	3
Storage Facilities			
HEU	-	-	-
Irradiated Fuel	1	-	1
Other	2	2	4
R&D Facilities	2	3	5
LOFs on Fuel Research	4	5	9
LOFs on Reproc. Research	-	1	1
LOFs Analytical Laborat.	3	2	5
Other LOFs	8	7	15
Total	38	32	70

9. References

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