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Naval nuclear propulsion: Brazil

Report by the Director General

A. Introduction

1. This report of the Director General is on Agency safeguards in relation to Brazil's naval nuclear propulsion programme.

B. Background

2. In a letter dated 10 December 2021, Brazil informed the Agency of its decision to initiate discussions with the Agency on an arrangement for Special Procedures for the use of nuclear material under safeguards in nuclear propulsion and in the operation of submarines and prototypes, in accordance with Article 13 of the Agreement between the Republic of Argentina, the Federative Republic of Brazil, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) and the Agency (the Quadripartite Safeguards Agreement).¹

3. Article 13 of the Quadripartite Safeguards Agreement (QSA) provides that if a State Party intends to exercise its discretion to use nuclear material² which is required to be safeguarded under the QSA for nuclear propulsion or operation of any vehicle, including submarines and prototypes, or in such other non-proscribed nuclear activity as agreed between the State Party and the Agency, the procedures provided in paras (a) – (c) of Article 13 shall apply.

¹ Reproduced in document INFCIRC/435.

² "Nuclear material" means any source or any special fissionable material as defined in Article XX of the Statute (...). See Article 98.2.O. of INFCIRC/435.

4. In the aforementioned letter, Brazil confirmed that, in compliance with the requirements set out in Article 13 of the QSA, “the use of the nuclear material for nuclear propulsion of submarines and prototypes will not be in conflict with any undertaking of Brazil under agreements concluded previously with the Agency referring to safeguards” and “during the period of application of the special procedures the nuclear material will not be used for the production of nuclear weapons or other nuclear explosive devices”. It also stated that the Brazilian Navy had developed indigenous technologies for the nuclear fuel cycle and was designing a nuclear-powered conventional submarine; its nuclear propulsion plant was also being developed indigenously, and the nuclear fuel for the reactor will be produced in Brazilian nuclear facilities, all of which are under Agency and ABACC safeguards.

5. Pursuant to Article 40 of the QSA and Code 3.1.2 of the Subsidiary Arrangements (General Part) to the QSA, Brazil notified the Agency that, in line with the schedule of the nuclear-powered submarine programme, a partial license for its construction had been issued by the Naval Authority for Nuclear Safety and Quality.

6. On 25 May 2022, Brazil provided the Agency with a “proposal of safeguards special procedures for the nuclear material for use in naval propulsion prototypes and in the conventionally armed nuclear powered submarine” in relation to the provisions of Article 13 of the QSA. On 26 May 2022, preliminary discussions between Brazil and the Agency were initiated. ABACC representatives also participated in these discussions.

7. The Director General, during his introductory remarks on 6 June 2022, informed the Board of Governors of Brazil’s proposal and the preliminary discussions with the Agency. He stated that for the Agency, the non-proliferation aspects and the legal obligations of all concerned were central.

C. Interactions between Brazil and the Agency

8. During the aforementioned meeting on 26 May 2022, Brazil provided the Agency with general information on the nuclear submarine operation, facilities that would be involved in the programme, and what Brazil considers “classified and sensitive technology and information”. In light of these considerations, Brazil indicated the facilities that would be involved in the development of naval nuclear propulsion including a land-based prototype reactor and submarine, and provided its understanding of how safeguards under the QSA could be applied under the arrangement for Special Procedures. The Agency indicated that it would continue the technical consultations with Brazil to develop the required arrangement. The Agency also reiterated its commitment to protect related classified knowledge, as required by the QSA and the Agency’s regime for the protection of classified safeguards information.

9. In October 2022, the Agency held a second meeting with Brazil and visited relevant facilities upon Brazil’s invitation. Brazil provided additional information regarding its proposal and on the relevant facilities. ABACC also participated in the meeting and the visits of the facilities.

10. In November 2022, a third meeting was held at which the Agency presented a conceptual proposal of safeguards measures to be considered as part of the discussions on the arrangement under Special Procedures in relation to Article 13 of the QSA. The Agency’s proposal was customized to protect information that Brazil considers sensitive, while maintaining a sound technical verification basis to enable it to provide assurances that nuclear material to be subject to the arrangement will not be diverted while it is used for nuclear propulsion or in the operation of the prototype reactor.

11. The Agency’s aim is to ensure that the safeguards measures and the approach to be developed in relation to the naval nuclear propulsion programme of Brazil will enable the Agency to fulfil its obligations under the QSA, and to provide a credible and soundly-based conclusion on the non-diversion

of nuclear material that will be subject to the arrangement under Article 13 of the QSA.³ Consultations between the Agency and Brazil on the conceptual proposal remain ongoing.

12. On 9 May 2023, the Agency sent a letter to ABACC reminding Brazil of its obligations under Article 40 of the QSA and the Subsidiary Arrangements (General Part) to the QSA to provide to the Agency the required early design information and updates, as appropriate, for planned facilities that will be involved in the naval nuclear propulsion programme of Brazil.

13. On 25 May 2023, the Agency received from Brazil through ABACC preliminary information related to the planned facilities of the naval nuclear propulsion programme.

D. Summary

14. Since May 2022, the Agency has engaged Brazil on technical discussions in relation to an arrangement under Special Procedures pursuant to Article 13 of the QSA. Technical consultations will continue for the foreseeable future.

15. The Director General will continue to report as appropriate.

³ INFCIRC/435 (QSA) Article 1; Article 2(a) and (c); and Article 13(a)(ii),