

# Monitoring Iran's Nuclear Activities: NPT and JCPOA Requirements

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As a Nuclear Nonproliferation Treaty (NPT) member state, Iran is required to implement a Comprehensive Safeguards Agreement (CSA) with the International Atomic Energy Agency (IAEA). The 2015 nuclear deal, known as the Joint Comprehensive Plan of Action (JCPOA), includes further monitoring and verification provisions, including implementation of an additional protocol to Iran's CSA, which expands the agency's access to information and sites and gives inspectors more tools to determine if a state's nuclear activities are entirely peaceful and the absence of undeclared nuclear materials.

As part of a December 2020 law, Iran is threatening to suspend implementation of its additional protocol if certain sanctions relief is not granted. It is unclear if Iran will also halt all or some of the JCPOA-required monitoring that goes beyond what is included in its CSA and additional protocol. While partial or complete suspension of the additional protocol and/or any of the JCPOA-specific measures would be a violation of the nuclear deal, Iran would still be obligated under the NPT to adhere to its CSA.

## Comprehensive Safeguards Agreement

The purpose of a safeguard's agreement is to verify that a state is meeting its obligations not to use its peaceful nuclear program for weapons purposes. According to the NPT, IAEA safeguards "must be applied on all source or special fissionable material in all peaceful nuclear activities" and with

a "view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices."

As part of a CSA, a state declares the type and quantity of its nuclear materials and the facilities where nuclear materials are present to the IAEA. The IAEA then collects relevant information to help determine if a state's declaration is correct, develops an approach to verify the state's declaration, and conducts the relevant safeguards activities. The IAEA seeks every year to draw a safeguards conclusion stating that nuclear material has not been diverted from peaceful purposes.

The IAEA verifies the declaration using inspections, material accountancy, and surveillance measures. There are several types of unannounced and scheduled inspections the IAEA can use to verify the declaration, confirm design information, and investigate questions arising from inadequate provision of information.

In addition to the ad hoc, routine, special, and safeguards inspections, IAEA tools under a CSA include:

- environmental sampling at facilities being accessed by inspectors;
- use of remote monitoring equipment to track nuclear materials;
- use of open sources to evaluate a state declaration; and
- voluntary reporting on imports and exports of nuclear materials and certain relevant equipment.

Iran also adheres to what is known as modified code 3.1 of the subsidiary arrangements to a safeguard's agreement. This requires Iran to submit design information for new nuclear facilities to the IAEA as soon as the decision is made to construct, or authorize construction, of a facility. This gives the IAEA additional time to verify the design of the facility and make any safeguards-related adjustments necessary.

## Additional Protocol

The additional protocol is a voluntary agreement negotiated between a state and the IAEA that expands the agency's access to information and sites. It is designed to give the IAEA more tools and information to provide assurances that a state is not engaged in undeclared nuclear activities.

For states implementing a CSA and an additional protocol, the IAEA seeks to draw a conclusion that all nuclear materials remain peaceful purposes and that there is no indication of undeclared nuclear materials or activities. In its 2019 safeguards statement, the IAEA was able to conclude that all of Iran's declared nuclear material remained in peaceful purposes, but that evaluations regarding the absence of undeclared nuclear material remain ongoing.

A key part of the additional protocol is that it expands the facilities that

states must include in their declaration to include activities relevant to the nuclear fuel cycle that do not involve nuclear materials, such as centrifuge production facilities and uranium mines, that would not be included in a CSA declaration. The state must provide information about, and inspector access to, this expanded list of sites.

Additional protocols are negotiated based on the 1997 model and typically also include:

- complementary access inspections to investigate inconsistencies in a state's declaration and/or resolve questions about possible undeclared activities and materials;
- short notice inspections at all buildings at a nuclear site;
- expanded use of environmental sampling at undeclared locations;
- providing information on the manufacture, import and export

of nuclear-related equipment and materials; and

- streamlining visa processes for inspectors.

Additional protocols are voluntary, but they become legally binding when ratified by the participating state. Iran is provisionally implementing its additional protocol as part of the JCPOA and committed to seek ratification of it within eight years of the JCPOA's implementation (2023). Even if the additional protocol is not ratified by Iran's parliament at that time, Iran will still be obligated to continue provisional implementation as part of its JCPOA commitments.

## JCPOA-Specific Measures

The JCPOA includes a number of verification and monitoring activities that go beyond the requirements and scope of a CSA and the additional protocol. These include:

- continuous surveillance of certain nuclear sites, such as uranium mines, uranium mills, and centrifuge production sites for up 15–25 years;
- approval in advance for the import or export of certain dual-use materials for 10 years;
- continuous monitoring of enrichment levels;
- daily access for inspectors at Natanz and Fordow for 15 years;
- recourse for the JCPOA's Joint Commission to resolve disputes over access between the IAEA and Iran with in a 24-day period; and
- prohibition of certain weaponization-related activities without prior approval in perpetuity.

## Additional Protocol

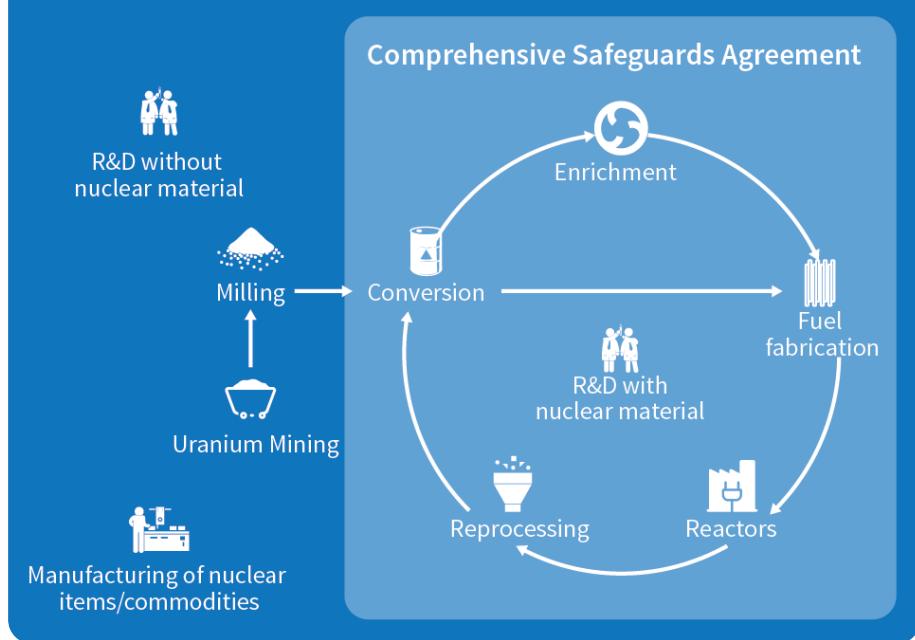


Illustration credit: IAEA