

VERIFICATION REQUIREMENTS FOR A NUCLEAR AGREEMENT WITH IRAN



**Nuclear Verification Capabilities
Independent Task Force of the
Federation of American Scientists**

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ABOUT THE TASK FORCE

This non-partisan Nuclear Verification Capabilities Independent Task Force was convened by the Federation of American Scientists to examine the technical and policy requirements to verify adequately a comprehensive or other sustained nuclear agreement with Iran. The object of this report is to set out critical objective criteria to evaluate the risks associated with any proposed agreement. This project has a particular urgency given that negotiations are underway with Iran on its nuclear program. In this report, the Task Force has outlined nine recommendations relating to monitoring and verification of an agreement with Iran.

The leading members of the Task Force were Chris Bidwell, Orde Kittrie, John Lauder and Harvey Rishikof. During the course of this project they organized an all-day workshop discussion at the American Bar Association's Washington, DC office and two roundtable discussions: one at Harvard University's Belfer Center for Science and International Affairs at the John F. Kennedy School of Government and one at the National Defense University's Center for the Study of Weapons of Mass Destruction. The Task Force members conferred with over 60 experts in the arms control, nonproliferation, verification, international law, and security fields and considered their inputs in making these recommendations. We thank each of them for their contributions. The members of the Task Force would also like to thank the John D. and Catherine T. MacArthur Foundation for its generous funding of this project.

The work of the Task Force was also informed by a January 2014 Defense Science Board (DSB) Task Force Report titled, Assessment of Nuclear Monitoring and Verification Technologies. Although the DSB report did not specifically address monitoring an agreement with Iran, the report did identify the stressing challenges to be faced in monitoring small and covert nuclear programs. Such challenges underscore the need for the steps that our Task Force is recommending.

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Disclaimer: This report is a product of the Task Force as a whole and not of the Federation of American Scientists, which simply convened the Task Force. The report represents the personal views of the authors and should not be seen as reflecting the views of the private and government organizations with whom the Task Force members are now or have been affiliated.

Introduction

The preamble of the *Joint Plan of Action* (JPA)¹ announced in November 2013 by Iran and the P5+1² states that the goal of the negotiations over Iran's nuclear program "is to reach a mutually-agreed long-term comprehensive solution that would ensure Iran's nuclear programme will be exclusively peaceful." This comprehensive solution "would involve a mutually defined enrichment programme with practical limits and transparency measures to ensure the peaceful nature of the programme." The JPA also states that "Iran reaffirms that under no circumstances will Iran ever seek or develop any nuclear weapons."

As part of the JPA, which is not legally binding, both sides had committed to take various "first steps," with a "duration of 6 months, and renewable by mutual consent." The JPA was subsequently renewed by mutual consent on July 18, 2014 for an additional four months and is now set to expire on November 24, 2014. Iran's listed steps include limiting uranium enrichment, refraining from reprocessing, and facilitating enhanced monitoring. The JPA also states that "the final step of a comprehensive solution, which the parties aim to conclude negotiating and commence implementing no more than one year after the adoption of this document, would include ratification and implementation of the Additional Protocol, consistent with the respective roles of the President and the Majlis (Iranian parliament)."

These negotiations now create a question for the U.S. policy community: What monitoring and verification measures and tools will the U.S., its allies, and the International Atomic Energy Agency (IAEA) require, in relation to a comprehensive nuclear agreement with Iran, in order to "ensure Iran's nuclear programme will be exclusively peaceful?" In light of Iran's previous history of noncompliance with its nuclear agreements, including noncooperation with the IAEA, there is reason for concern that Iran may push the envelope on the letter of the agreement, fail to cooperate with inspectors, or undertake illicit activities in covert facilities. The goal of this report is to address such concerns by mapping out a sufficiently rigorous monitoring architecture to "ensure Iran's nuclear programme will be exclusively peaceful."

In relationship to a nuclear agreement with Iran, the goal of monitoring is often described as the ability to detect in a timely manner a "break out" dash by Iran at its declared facilities to produce enough weapons-grade uranium or separated plutonium for a nuclear weapon. In comparison with a break out scenario, in which Iran were to produce weapons grade uranium at overt facilities, it may be more likely that Tehran would engage in a "sneak-out" scenario, in which "Iran could seek to build covert enrichment facilities in order to build nuclear weapons in secret."³ The 2007 National Intelligence Estimate assessed with "moderate confidence that Iran probably would use covert facilities – rather than its declared nuclear sites – for the production of highly enriched uranium for a weapon."⁴ If a monitoring architecture – including both the negotiated measures and national intelligence means – is to "ensure the peaceful nature"

of Iran's nuclear program, it must in a timely manner detect both "break outs" and "sneak outs."

The Task Force has determined that to evaluate the logic and efficacy of any nuclear deal, it is essential to assess the amount of risk that would be assumed by the parties. We have agreed that nine elements are critical to assessing and mitigating the spectrum of risk -- six of these are potential elements of an effective agreement; the other three recommendations are U.S. government implementation steps that would facilitate effective verification of the agreement.

We recognize that not all recommended measures will be easily negotiable or ready for rapid implementation. An agreement may not therefore include all of the six potential agreement elements, with a resulting increased risk of undetected noncompliance. The risk-benefit assessment, as well as the question of how long each of these measures should remain in place, are ultimately political judgments for the executive branch and Congress to decide. Those engaged in monitoring will do their best to inform such judgments.

The key to monitoring measures working effectively to reduce risk is the synergy created among them. For example, data declarations can help define the locations and objects of inspections, routine inspections can audit the declarations, national and international unilateral monitoring and intelligence means can detect anomalies, and challenge inspections and the work of consultative bodies can gather more information relevant to the resolution of those anomalies.

With Iran, we suggest that risk reduction can be achieved through a layered approach to monitoring. Some or all of the monitoring activities provided for under the agreement with Iran will fall to the IAEA. In addition, the U.S. and other P-5+1 governments will undoubtedly wish to use their national means to also monitor Iran's nuclear program. The Administration and Congress can play a positive and strong role in insisting on effective verification, providing the necessary resources for monitoring tasks, and bringing attention to potentially emergent compliance issues.

The current set of sanctions has helped bring Iran to the bargaining table, and the international community's bargaining power is strong. In short, if the monitoring elements that we recommend are not pursued now to diminish the risks of deception, it is difficult to envision that Iran would be compliant in the future, post-sanctions environment. Hence, we believe a bad deal is worse than no deal. Our hope is that this paper helps to define the monitoring elements that should be part of a good deal and effectively implemented agreement.

Summary of Recommendations

Six Elements of an Effective Agreement

1. The agreement should require Iran to provide, prior to the next phase of sanctions relief, a comprehensive declaration that is correct and complete concerning all aspects of its nuclear program both current and past.
2. The agreement should provide the IAEA, for the duration of the agreement, access without delay to all sites, equipment, persons and documents requested by the IAEA, as currently required by UN Security Council Resolution 1929.
3. The agreement should provide that any material acts of non-cooperation with inspectors are a violation of the agreement.
4. The agreement should provide for the establishment of a consultative commission, which should be designed and operate in ways to maximize its effectiveness in addressing disputes and, if possible, building a culture of compliance within Iran.
5. The agreement should provide that all Iranian acquisition of sensitive items for its post-agreement licit nuclear program, and all acquisition of sensitive items that could be used in a post-agreement illicit nuclear program, must take place through a designated transparent channel.
6. The agreement should include provisions designed to preclude Iran from outsourcing key parts of its nuclear weapons program to a foreign country such as North Korea.

Three Proposed U.S. Government Actions to Facilitate Effective Implementation of an Agreement

1. The U.S. Government should enhance its relevant monitoring capabilities, invest resources in monitoring the Iran agreement, and structure its assessment and reporting of any Iranian noncompliance so as to maximize the chances that significant anomalies will come to the fore and not be overlooked or considered *de minimis*.
2. The U.S. Government and its allies should maintain the current sanctions regime architecture so that it can be ratcheted up incrementally in order to deter and respond commensurately to any Iranian non-compliance with the agreement.
3. The U.S. Government should establish a joint congressional/executive branch commission to monitor compliance with the agreement, similar to Congress having created the Commission on Security and Cooperation in Europe to monitor the implementation of the 1975 Helsinki Accords.

What follows are discussions in greater detail of each element and proposed action listed above.

Six Elements of an Effective Agreement

Element 1: The agreement should require Iran to provide, prior to the next phase of sanctions relief, a comprehensive declaration that is correct and complete concerning all aspects of its nuclear program both current and past.

In our judgment, requiring Iran to provide correct and complete data declarations of its nuclear activities is the most important step among measures to monitor Iranian compliance. Without a robust data declaration, other aspects of the monitoring regime, including inspections and the use of national technical means, are operating largely in the blind.

An agreement with Iran should require that:

- a) Iran provide a correct and complete description of past Iranian nuclear activities including what the IAEA refers to as “possible military dimensions.” Critical parts of Iran’s nuclear program are still not fully understood by the international community. Thus, a final agreement must require Iran to provide a baseline of information about sites, equipment, material, persons, and activities sufficient to make Iran’s nuclear program transparent. Until Iran correctly and completely answers previous questions from the IAEA about such activities, explains who was involved, what actions were taken, and where they took place, there can be no international confidence that the development of nuclear weapons capabilities has ceased. It is vital that the agreement’s data declaration provisions capture past Iranian activities in sufficient detail to provide a baseline understanding of how far Iran may be along the path to nuclear weapons.
- b) Iran provide a correct and complete data declaration of Iran’s current nuclear sites, activities, material, and equipment to provide a baseline for normalcy and the functional equivalent of a tax return or internal audit. Iran should be asked, for example, to identify the location of all of its centrifuges by type and to notify the consultative commission (see Element 4, below) and the IAEA prior to centrifuges being moved from one location to another. The declarations are compliance tools that help test Iran’s willingness to be transparent. The declarations also help establish those areas where Iranian nuclear equipment, material, and activities are located and which should therefore be subjected to persistent inspection and monitoring.

The goal of requiring a comprehensive declaration is not to punish or embarrass the Iranian regime. A comprehensive declaration is necessary to create a baseline against which later discoveries and facts can be measured, and to provide the foundation for confidence-building that would be necessary for any agreement to be maintained. The agreement should be as precise as possible in describing the types of information Iran is being asked to provide and the format in which the information should be presented. Such precision has been a successful feature of many prior international arms

agreements. For example, the Chemical Weapons Convention (CWC) requires that data declarations⁵ by State Parties to the Convention include:

- a. The aggregate quantity of each chemical declared;
- b. The precise location of each chemical weapons storage facility, expressed by:
 - (i) Name;
 - (ii) Geographical coordinates; and
 - (iii) A detailed site diagram, including a boundary map and the location of bunkers/storage areas within the facility.
- c. The detailed inventory for each chemical weapons storage facility including specified chemicals, equipment, and munitions.

Although the CWC's authorities are not specifically applicable here, Iran's 1997 accession to the CWC, and membership in it since then, provides a precedent for Iran agreeing to subject itself to detailed declarations and intrusive inspections in relation to WMD proliferation prevention. Thus the CWC precedent helps undercut arguments that Iran might choose to make that IAEA demands under existing and well established legal authorities, such as the IAEA's Additional Protocol (which the JPA commits Iran to ratify and implement as part of a comprehensive agreement), or under an Additional Protocol Plus, are unreasonable.

Element 2: The agreement should provide the IAEA, for the duration of the agreement, access without delay to all sites, equipment, persons and documents requested by the IAEA, as currently required by UN Security Council Resolution 1929.

It is our view that there will be a high risk that the agreement will not “ensure Iran’s nuclear program will be exclusively peaceful” unless:

- a) the agreement specifically requires Iran to, for the duration of the agreement, provide the IAEA with “access without delay to all sites, equipment, persons, and documents requested by the IAEA,” as UNSCR 1929 currently requires; and
- b) the IAEA vigorously exercises that authority.

The IAEA must be provided with such access without delay to all sites, equipment, persons, and documents requested by the IAEA (hereinafter referred to as “access without delay”) because there is a significant possibility that Iran could otherwise enrich uranium to weapons grade, manufacture nuclear weapon components, or even assemble complete bombs, in small, covert facilities,⁶ even while abiding by an agreement’s restrictions on known facilities such as Natanz, Fordow, and Arak. The U.S. and the IAEA may not have the capacity to detect, with sufficient reliability and speed, a parallel nuclear program hidden at clandestine facilities.

As history demonstrates, the IAEA does not currently have sufficient capacity to detect such programs. In fact, even when Iran was provisionally applying the Additional Protocol between 2003 and 2006, the IAEA had considerable difficulties obtaining information and access. Even if an agreement with Iran does provide the IAEA with sufficient authority to detect a parallel nuclear program hidden at clandestine facilities, the IAEA will need to exercise that authority far more vigorously than it has traditionally exercised its most intrusive authorities.

In light of these factors, we recommend the following principles for agreement provisions that would provide the IAEA with sufficient authority to have, and to vigorously exercise, access without delay in Iran:

- 1) The agreement should reaffirm the binding nature of, and build upon, the existing legal requirements that Iran provide access.
- 2) The agreement should include a comprehensive protocol for IAEA inspections and interviews. The IAEA’s current most intrusive inspection authorities specify that terms of reference are to be agreed through negotiations between the IAEA and the state to be inspected.
- 3) The comprehensive protocol could be modeled in part on the challenge inspections provided for by the Chemical Weapons Convention (CWC). Modeling the inspection protocol on the CWC is particularly useful because Iran has signed and ratified the CWC, meaning that it has already agreed in

principle to the intrusiveness of such challenge inspections, which can be carried out at any facility or location, including military sites.

- 4) The agreement should provide that the IAEA will quickly begin to exercise its most intrusive inspection authorities, perhaps by the Iranians themselves inviting a challenge inspection of one of their facilities.
- 5) The agreement should maximize IAEA ability to identify where inspections should occur by authorizing the IAEA to conduct wide area environmental monitoring.

Element 3: The agreement should provide that any material acts of non-cooperation with inspectors are a violation of the agreement.

In any monitoring and verification agreement, one of the thorniest questions involves determining if, and if so when and how, one of the parties has violated that agreement. The earliest indicator of Iran's compliance, or lack thereof, with a comprehensive nuclear agreement is likely to be whether or not Iran is cooperating with those responsible for monitoring the agreement. Unfortunately, complex monitoring activities can provide significant room for dispute. What "non-cooperation" is to one side can be a "legitimate resistance to an unreasonable interpretation" or "a technical disagreement" to the other.

To minimize disputes, the parties must define clearly in the terms of the agreement how monitoring and verification is to take place, including by specifying terms of access to physical sites and operations. For this agreement to work, Iran will need to persuade the international community early on that it is committed to abiding by all the requirements of the agreement, and will need to implement a "culture of compliance," or "habits of cooperation." Once an agreement is in place, one of its first tests may be a request to inspect a location or some other object of verification. How Iran handles such an early request will be a significant signal of what its intentions are with regard to honoring the agreement, and whether or not further sanctions relief is warranted. Discovering a particular covert illicit piece of equipment or activity can, even with extensive access, require months of evidence accumulation. In contrast, a refusal to allow legitimate access to a facility can occur quickly and is readily demonstrable. Such a refusal of access can impede the discovery of illicit items and activities. Consequently, it is critical for the agreement to provide that any material acts of non-cooperation with inspectors are a violation of the agreement.

This recommendation is grounded in international law, including the most recent legally binding Chapter VII UN Security Council resolution regarding Iran's nuclear program, which "decides that Iran shall without delay comply fully and without qualification with its IAEA Safeguards Agreement," and "reaffirms that Iran shall cooperate fully with the IAEA on all outstanding issues, particularly those which give rise to concerns about the possible military dimensions of the Iranian nuclear programme, including by providing access without delay to all sites, equipment, persons and documents requested by the IAEA." (UNSCR 1929 paragraphs 3, 5). Notwithstanding this mandate, the Director General of the IAEA stated in a September 2012 address to the IAEA General Conference that: "Iran is not providing the necessary cooperation to enable us to provide credible assurance about the absence of undeclared nuclear material and activities." Similarly, in his May 2014 report, to the Security Council and the Board of Governors, four months after commencement of implementation of the Joint Plan of Action, the Director General stated that: "The Agency will not be in a position to provide credible assurance about the absence of undeclared nuclear material and activities in Iran unless and until Iran provides the necessary cooperation with the Agency."

Element 4: The agreement should provide for the establishment of a consultative commission, which should be designed and operate in ways to maximize its effectiveness in addressing disputes and, if possible, building a culture of compliance within Iran.

The first step in preparing to deal with potential compliance issues should be the establishment of a consultative body, as often established for prior international agreements. Such commissions or committees, variously named, have been a feature of both bilateral arms control, such as the strategic arms and intermediate-range missile agreements between the United States and Russia, and multilateral agreements such as the Conventional Forces in Europe Treaty, the Open Skies Treaty, and the Chemical Weapons Convention. The Joint Plan of Action (JPA) on Iran's nuclear program provides for a Joint Commission of the P-5+1 and Iran to "be established to monitor the implementation of the near-term measures and address issues that may arise, with the IAEA responsible for verification of nuclear-related measures." The Joint Commission is to also "work with the IAEA to facilitate resolution of past and present issues of concern." This Joint Commission could serve as the basis for a consultative body for a comprehensive nuclear agreement with Iran.

We believe that the Joint Commission referenced in the JPA, or a successor body provided for in the comprehensive nuclear agreement, should be the initial forum for the discussion of anomalies and information relevant to compliance not already resolved in the inspection process. The body should include technical experts that could delve into the details of an anomaly and ask appropriate questions. In essence, this body would be the forum in which Iran, the P5+1, and potentially the IAEA would address the day-to-day details of implementation at an operator's level below national capitals and apart from the cumbersome bureaucracy of the UN.

An active consultative body, working professionally and out of the glare of public view, can help resolve such issues early on and signal to the Iranians and others in the region that the P5+1 is serious about compliance.

What should such a consultative commission do?

- 1) Resolve ambiguities before they rise to compliance issues at the political level and help reduce the risks that Iran would push the envelope for interpreting the agreement in ways that would facilitate efforts at noncompliance.
- 2) Keep Iran close to the source of pressure that will result from non-compliance. The discussions within the consultative body and the interactions of international inspectors with their Iranian counterparts provide a channel to signal displeasure with any sign that the Iranians are being less than forthcoming. The commission provides a venue to warn bluntly and quietly of further consequences.
- 3) Provide a forum for each state party to have representatives of its various institutional interests formally and informally observe and participate. It might make sense for the commission to become a vehicle for Iranian government organizations like the Revolutionary Guard, the Intelligence Ministry, and the

Atomic Energy Organization of Iran to participate directly in the implementation of the agreement, thereby increasing their stake in facilitating compliance. For the United States, the commission provides one appropriate venue for Congressional involvement in the compliance process.

- 4) Advance U.S. interests with other members of the P5+1 and with Iran by institutionalizing the establishment of long-term relationships, particularly in the area of openness and confidence-building, and, perhaps, by providing opportunities to discuss relevant issues on the margins.
- 5) Provide a forum for all parties to float ideas for improving and expanding the agreement. Consultative bodies for other agreements have demonstrated that they can discover, discuss, and thoroughly vet such improvements. Such bodies have proved capable of negotiating final implementing side agreements or amendments to the main document (subject, of course, to approval in capitals).

Element 5: The agreement should provide that all Iranian acquisition of sensitive items for its post-agreement licit nuclear program, and all acquisition of sensitive items that could be used in a post-agreement illicit nuclear program, must take place through a designated transparent channel.

Absent a designated transparent procurement channel, there is a significant risk that Iran could circumvent the agreement by covertly procuring elements of a parallel illicit nuclear and missile program. Iran's nuclear and missile programs are reportedly still dependent on import of key items, including some of the types of quality equipment that are necessary to operate a gas centrifuge plant.⁷ Sanctions have hindered Iranian acquisition of various vital nuclear and missile dual-use items.⁸ However, even under the current nuclear and missile sanctions on Iran, which include stringent procurement restrictions imposed by UN Security Council resolutions, Iran has met with considerable success procuring nuclear-related and missile-related dual-use items.⁹

A comprehensive nuclear agreement with Iran will result in a significantly increased volume of overall Iranian trade with the rest of the world. It will apparently also provide for licit Iranian nuclear and missile programs, while banning some nuclear and perhaps also some missile activities. The current difficulties in preventing illicit Iranian procurement of nuclear-related and missile-related items will be far greater amongst a higher volume of general trade, and a significant volume of licit nuclear trade, in the aftermath of a comprehensive agreement.

By requiring that all Iranian procurement of sensitive items for its post-agreement licit nuclear or missile program, and of sensitive items that could be used in an illicit nuclear or missile program, occur through a designated transparent channel, the agreement would reduce the risks presented by the increase in trade. If any such procurement were to take place outside the designated channel, it would stand out as an anomaly. The use of such a channel would thus ease the tasks of both international monitoring and national intelligence collection.

This element focuses on the risk of Iranian procurements from other countries of various types of key dual-use items for a parallel illicit nuclear program. The risk of such Iranian dual-use acquisitions would be greatly reduced by including the following in the agreement or, as indicated, in related legally binding Security Council resolutions:

- 1) A narrow exception should be created to the current requirement that UN member states prevent the supply, sale or transfer to Iran of various listed nuclear-related and missile-related items. A new UN Security Council resolution could provide that member states' current requirements would continue to apply except in cases where they are participating in an approved Iranian procurement through the designated procurement channel.
- 2) Iran should be required by the agreement to procure through a designated transparent channel, and only through that designated procurement channel, all specified sensitive items for its post-agreement licit nuclear and missile program, and all specified sensitive items that could be used in an illicit nuclear and missile

program. Iranian procurement of such items outside of the designated channel should be deemed a violation of the agreement. Because it will be relatively easy to determine whether a particular procurement has taken place through or, alternatively, outside the designated channel, the U.S. and the P-5+1 will be able to respond vigorously to such violations.

- 3) As part of the procurement process, Iran must specify the end use and end user, receive approval of them from the designated procurement channel oversight body, and agree to provide the IAEA with such access as it may request to verify the end use and end user at any time. Failure to abide by these requirements should be deemed a violation of the agreement.
- 4) The designated procurement channel must be designed so as to avoid the corruption and other problems that characterized the UN's Iraq Oil-for-Food Program, including by operating with much greater transparency.

Element 6: The agreement should include provisions designed to preclude Iran from outsourcing key parts of its nuclear weapons program to a foreign country such as North Korea.

There is a significant risk that Iran could circumvent restrictions on nuclear weapons activities on its own territory by acquiring fissile material from a foreign country such as North Korea, or having such a country conduct tests for it. In a March 2014 report, the Defense Department stated that, “One of our gravest concerns about North Korea’s activities in the international arena is its demonstrated willingness to proliferate nuclear technology.” A 2013 State Department report said that Syria’s Al Kibar reactor (destroyed by Israel in 2007) was “constructed with North Korean assistance” and assessed that “the reactor’s intended purpose was the production of plutonium, because the reactor was not configured for power production.” North Korea also has a long history of providing Iran with ballistic missile technology and reportedly even missiles themselves.¹⁰ As the March 2014 Defense Department report noted, “weapons sales are a critical source of foreign currency for North Korea.”

Iran might more likely purchase fissile material, rather than bombs, from North Korea, for several reasons including the fact that fissile material can more readily be tested for reliability. If North Korea were to sell fissile material to Iran, it would likely not have significant difficulty in making the delivery. For example, an object as valuable and compact as weapons grade uranium or plutonium could be delivered directly by air. As the UN Panel of Experts on North Korea sanctions has reported, items “can be sent by direct air cargo from North Korea to the destination country. Some modern cargo planes can fly non-stop from North Korea to Iran.”¹¹

The agreement should include the following:

- 1) Iran must detail its past nuclear cooperation with North Korea and other states. It will be far easier to deter, detect, and interdict future nuclear assistance to Iran if Iran has had to make a declaration of its past nuclear cooperation with states such as North Korea.
- 2) A requirement of transparency for all Iranian imports of specified sensitive items usable in a nuclear program, as recommended in Element 5. It would be much easier to detect and deter illicit procurements (from North Korea or elsewhere) if they could easily be distinguished from licit procurements.
- 3) The IAEA will have access without delay, as recommended in Element 2. Such access will both deter illicit Iranian imports from North Korea or elsewhere and enable the IAEA to act on credible intelligence that such imports have occurred.
- 4) Iran must specifically commit not to acquire, and not to have on Iranian soil, HEU or weapons-grade plutonium (besides its known existing research stocks).

- 5) Iran must commit not to engage in nuclear cooperation with states that are not members of the NPT.

Three Proposed U.S. Government Actions to Facilitate Effective Implementation of an Agreement

Action 1: The U.S. Government should enhance its relevant monitoring capabilities, invest resources in monitoring the Iran agreement, and structure its assessment and reporting of any Iranian noncompliance so as to maximize the chances that significant anomalies will come to the fore and not be overlooked or considered *de minimis*.

The Defense Science Board Task Force Report on Nuclear Monitoring and Verification Technologies underscores that monitoring nuclear programs is challenging, but the Report suggests a number of steps that can be taken to make monitoring more effective and to mitigate, but not eliminate, the risks. No other state has the range and depth of collection and analytical capabilities of the United States, and it will be imperative that those capabilities be continually replenished, improved, and marshaled in support of monitoring of the Iranian nuclear agreement.

Moreover, the United States, like other states, will need to make its own judgments about Iranian compliance with a nuclear agreement. Verification is the process of reaching political judgments about the extent and significance of compliance with international agreements and the determination of how to resolve ambiguities or evidence of noncompliance. Although international bodies like the IAEA can contribute greatly to the verification process, compliance judgments are a national responsibility for which the United States Government will need to prepare.

As noted earlier in this paper, comprehensive data declarations by Iran, combined with routine and challenge inspections, would go a long way toward deterring and detecting potential noncompliance. But it is clear, however, that a nuclear agreement with Iran cannot be effectively monitored without the United States bringing to bear its resources for monitoring both in support of the international community and to inform the United States' own judgments about compliance. It would be helpful to have an explicit requirement in the agreement with Iran that there will be no interference with national means being used to carry out monitoring of Iranian compliance.

To achieve synergy, the interrelationship of negotiated measures and national means needs to be orchestrated. During the height of arms control monitoring in the late 1980s and 1990s, the Treaty Monitoring Manager within the U.S. Intelligence Community proved an effective vehicle for coordinating the work of organizations that were implementing both negotiated monitoring measures and intelligence collection activities in support of agreement verification.¹² A similar position should be established for the monitoring of the Iranian agreement.

The Congress can emphasize the importance of verification and assessing compliance and provide appropriate encouragement, and funding, to the executive branch to give U.S. monitoring capabilities and international negotiated measures sufficient priority and capabilities. Such legislation as may be required for the lifting of sanctions could provide Congress the opportunity, as it has often for other arms control and

nonproliferation agreements, to specify the U.S. resources that should be arrayed in support of implementation of the agreement.

One additional step that could be taken to signal United States seriousness about compliance with the comprehensive agreement with Iran would be to request that the executive branch prepare a periodic unclassified compliance report and classified annex for the Congress on the agreement. Such reports have often been a feature of past agreements. We recognize that such reports may require extra work in the executive branch and can lead to political posturing and bureaucratic arguments. Still, such political attention is another way to demonstrate to Iran and other countries that unresolved major concerns about compliance will find their way into policy debate and will not be overlooked.

Action 2: The U.S. Government and its allies should maintain the current sanctions regime architecture so that it can be ratcheted back up incrementally in order to deter and respond commensurately to any Iranian non-compliance with the agreement.

Sanctions have both constrained Iran's nuclear program and helped bring Iran to the negotiating table. As the JPA makes clear, a comprehensive nuclear agreement between Iran and the P-5+1 will include the P-5+1 providing sanctions relief in exchange for Iran making concessions regarding its nuclear program. This differs from traditional arms control agreements, in which both sides commit to relatively analogous restrictions on their armaments, and non-compliance by one party can readily be countered with commensurate non-compliance by the other party.

In the case of Iran, key elements of a nuclear program can be restarted, or ramped up, more quickly than sanctions legislation can be drafted, debated, and passed by Congress. Consequently, we recommend that the architecture of U.S. sanctions on Iran be left in place, with the executive branch providing only temporary waivers or limited suspensions. This would facilitate the President applying penalties quickly and proportionately in response to any violations of the agreement by Iran. An incremental approach to sanctions relief was already implemented in conjunction with the JPA, with Iran scheduled to receive a total of \$4.2 billion in frozen assets in stages over the JPA's six month term.¹³

One approach then would be to create a system to grant Iran temporary relief on a transaction by transaction basis (through a licensing process) until it establishes a significant track record of compliance with its nuclear verification measures. Such a licensing process may require increased funding of the departments of Commerce and Treasury in order to satisfy increased demands. In addition, licensing could require that all associated transactions be conducted through specified European and American financial institutions that would be permitted to establish correspondent accounts with Iranian banks. These Western banks would be particularly sensitive to potential illicit transactions and thus might reassure those wishing to conduct licit business with Iran that they would not be subject to reputational risk or fines. Acting out of self-interest, these banks would be the vanguard of the system's integrity.

Another approach (executed either separately or in combination with the above), would be to release the current frozen or blocked Iranian funds in foreign banks over time (phased) in response to predetermined acts of Iranian cooperation. This would give Iran tangible monetary relief while keeping the current sanctions architecture in place. However, the amount of those frozen or blocked funds is unclear, with estimates ranging from \$150 billion¹⁴ down to \$10 billion¹⁵ in fully frozen Iranian funds.

Just as important as keeping the sanctions architectures intact is the sequencing of the initial sanctions relief after a comprehensive agreement is reached. The first significant act of relief should not be granted until at least 30 days after Iran gives its "correct and complete" declaration regarding its nuclear program (see Element 1). An initial review by the executive and legislative branches would quickly reveal how serious

Iran is about committing to transparency with regard to its nuclear program and give a clear indication as to whether or not the U.S. should take the next step in granting relief.

In granting sanctions relief, it must be remembered that international businesses cannot, in most cases, be required to conduct business with Iran. In addition, U.S. prohibitions on transacting with Iran bind some, but far from all, foreign businesses. Businesses act by balancing risks, both legal and reputational¹⁶, against incentives. Thus, the U.S. should both leave in place the architecture of Iran sanctions and be very clear as to what specific restrictions on doing business with Iran have been waived and for how long. Providing such temporary relief may require some Congressionally legislated modifications to current sanctions law. Sanctions relief will have to be carefully calibrated so as to both provide Iran with any appropriate relief and also deter and respond commensurately to any Iranian noncompliance.

Action 3: The U.S. Government should establish a joint congressional/executive branch commission to monitor compliance with the agreement, similar to Congress having created the Commission on Security and Cooperation in Europe to monitor the implementation of the 1975 Helsinki Accords.

U.S. policy towards Iran's nuclear program will be most effective if the executive branch and Congress are both well informed and can work closely together in monitoring compliance with the agreement, and shaping responses to any Iranian noncompliance. From a practical perspective, Congressional involvement is essential because Congress played a critical role in creating the tough economic sanctions that helped force Iran to the negotiating table, and could impose additional sanctions over the Administration's objections.

It appears that it will, for two main reasons, be particularly difficult for Congress to employ its traditional oversight tools with regard to a comprehensive nuclear agreement with Iran. First, the agreement will reportedly not be legally binding, much as the Joint Plan of Action was not legally binding.¹⁷ Congress will thus have little to no opportunity to authorize its conclusion (making it harder for Congress to exert leverage or impose conditions on the agreement).

Second, the comprehensive nuclear agreement, which will presumably be public, may leave many significant details to a non-public implementing agreement, access to which may be severely restricted. The implementing agreement for the Joint Plan of Action (JPA) was not available to the public. While the JPA's implementing agreement was shared with Congress, Members of Congress and Congressional staffers have to review it in a special room and are not permitted to remove notes.¹⁸

These concerns could be addressed by establishing a joint congressional/executive branch commission to monitor compliance with the P-5+1 agreement with Iran. The commission could be modeled in part on the U.S. Commission on Security and Cooperation in Europe, also known as the U.S. Helsinki Commission. The U.S. Helsinki Commission, which includes representatives of both Congress and the executive branch, was established in 1976 to monitor implementation of the 1975 Final Act of the Conference on Security and Cooperation in Europe ("the Helsinki Accords"). The Helsinki Accords, which are not legally binding, address various issues including confidence-building and disarmament, as well as human rights, education, and cooperation in the fields of economics, science, technology, and the environment. The Commission has a professional staff of thirteen that focuses on monitoring implementation of the agreement and is hired specifically with that in mind. The executive branch opposed the establishment of the U.S. Helsinki Commission as an intrusion into the negotiating and implementation responsibilities of the executive branch. Nevertheless, the U.S. Helsinki Commission has worked successfully for years and is considered by experts to have helped strengthen the U.S. negotiating position and helped contribute to promoting Soviet compliance with the Helsinki Accords.

The Iran agreement implementation commission could have the following components:

- 1) The Iran commission could consist half of members representing the executive branch and half of members providing bipartisan Congressional representation.
- 2) The Iran commission would have a staff with security clearances and extensive expertise in issues such as nuclear weapons program design, monitoring and verification, U.S.-Iran relations, sanctions, and international law. Staff would have ready access to all U.S. agreements with Iran, whether or not they are legally binding, and select staff should have access to U.S. intelligence relating to Iranian compliance with such agreements.
- 3) The Iran commission could convene public hearings and briefings; issue public reports concerning implementation of Iran nuclear agreement commitments; and provide recommendations to Congress and the executive branch.

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- ¹ See, e.g., <http://www.iaea.org/Publications/Documents/Infcirc/2013/infcirc855.pdf>.
- ² The P5+1 is comprised of China, France, Germany, Russia, the United Kingdom, and the United States.
- ³ Gary Samore, *Nuclear Rights and Wrongs*, FOREIGN AFFAIRS, November 14, 2013, <http://www.foreignaffairs.com/articles/140270/gary-samore/nuclear-rights-and-wrongs>. See also *Key Questions*, Iran Matters, Harvard Belfer Center, <http://iranmatters.belfercenter.org/nuclear-program/key-questions> (Stating “By diverting and enriching uranium to 90 percent at a covert enrichment plant, the sneak out option could allow Iran to produce sufficient material for a bomb without being detected.”).
- ⁴ *Key Judgments from a National Intelligence Estimate on Iran’s Nuclear Activity*, N.Y. Times, December 4, 2007, http://www.nytimes.com/2007/12/04/washington/04itext.html?pagewanted=all&_r=0.
- ⁵ The Convention identifies several pages of specific details that should be provided for each chemical and munition in the declaration.
- ⁶ See, e.g., Gary Samore, *Nuclear Rights and Wrongs*, FOREIGN AFFAIRS, November 14, 2013, <http://www.foreignaffairs.com/articles/140270/gary-samore/nuclear-rights-and-wrongs>. See also *Key Questions*, Iran Matters, Harvard Belfer Center, <http://iranmatters.belfercenter.org/nuclear-program/key-questions> (“By diverting and enriching uranium to 90 percent at a covert enrichment plant, the sneak out option could allow Iran to produce sufficient material for a bomb without being detected.”); Robert J. Einhorn, *Preventing a Nuclear-Armed Iran: Requirements for a Comprehensive Nuclear Agreement*, March 31, 2014, p. 26, <http://www.brookings.edu/~media/research/files/papers/2014/03/31%20nuclear%20armed%20iran%20einhorn/31%20nuclear%20armed%20iran%20einhorn%20pdf.pdf>.
- ⁷ See, e.g., David Albright, Paul Brannan, Andrea Stricker, Christina Walrond & Houston Wood, *Preventing Iran from Getting Nuclear Weapons: Constraining Its Future Nuclear Options*, Institute for Science and International Security, March 5, 2012, p. 27, http://isis-online.org/uploads/isis-reports/documents/USIP_Template_5March2012-1.pdf.
- ⁸ See, e.g., David Albright, Andrea Stricker, and Houston Wood, *Future World of Illicit Nuclear Trade: Mitigating the Threat*, July 29, 2013, p. 14, http://isis-online.org/uploads/isis-reports/documents/Full_Report_DTRA-PASCC_29July2013-FINAL.pdf.
- ⁹ See, e.g., David Albright, Andrea Stricker, and Houston Wood, *Future World of Illicit Nuclear Trade: Mitigating the Threat*, July 29, 2013, pp. 7, 25, 48-49, 55-57, 69-70, http://isis-online.org/uploads/isis-reports/documents/Full_Report_DTRA-PASCC_29July2013-FINAL.pdf.
- ¹⁰ See, e.g., Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the Democratic People’s Republic of Korea*, March 2014, p. 19, http://www.defense.gov/pubs/North_Korea_Military_Power_Report_2013-2014.pdf; James R. Clapper, *Statement for the Record: Worldwide Threat Assessment of the U.S. Intelligence Community*, January 29, 2014, http://www.dni.gov/files/documents/Intelligence%20Reports/2014%20WWTA%20%20SFR_SSCI_29_Jan.pdf; William J. Broad, James Glanz, and David E. Sanger, *Iran Fortifies Its Arsenal with the Aid of North Korea*, N.Y. Times, November 28, 2010, <http://www.nytimes.com/2010/11/29/world/middleeast/29missiles.html>.
- ¹¹ Report of the Panel of Experts Established Pursuant to resolution 1874 (2009), p. 24, contained in S/2010/571, November 5, 2010, http://www.un.org/ga/search/view_doc.asp?symbol=S/2010/571.
- ¹² The Defense Science Board Report describes the position of Treaty Monitoring Manager and the position’s potential role in future agreements on pages 62-63 of its report, *Assessment of Nuclear Monitoring and Verification Technologies*, January 2014.
- ¹³ See, e.g., Testimony of Wendy R. Sherman, Under Secretary for Political Affairs, before the Senate Committee on Banking, Housing, and Urban Affairs, December 12, 2013, <http://www.state.gov/p/us/rm/2013/218639.htm>.
- ¹⁴ Jay Solomon, *Iran Central Banker Akbar Komijani Seeks Economic Turnaround*, Wall Street Journal, July 1, 2014, <http://online.wsj.com/articles/iran-central-banker-akbar-komijani-seeks-economic-turnaround-1404257967>.

¹⁵ Mark Dubowitz and Rachel Ziemba, When Will Iran Run Out of Money?, October 2, 2013, http://www.defenddemocracy.org/stuff/uploads/documents/Iran_Report_Final_2.pdf.

¹⁶ See, e.g., Remarks of Under Secretary for Terrorism and Financial Intelligence David Cohen before the New York University School of Law on “The Law and Policy of Iran Sanctions,” September 12, 2012, <http://www.treasury.gov/press-center/press-releases/Pages/tg1706.aspx>

¹⁷ Duncan Hollis, *The New Iran Deal Doesn’t Look Legally Binding. Does it Matter?*, Opinio Juris, November 24, 2013, <http://opiniojuris.org/2013/11/24/new-us-iran-deal-doesnt-look-legally-binding-matter/> .

¹⁸ *Implementation of the Iran Nuclear Deal*, Joint Hearing of the Terrorism, Nonproliferation and Trade and Middle East and North Africa Subcommittees of the House Foreign Affairs Committee, January 28, 2014 (Federal News Service transcript)(Congresswoman Ileana Ros-Lehtinen (R-FL), the chair of the House Foreign Affairs Subcommittee on the Middle East and North Africa, noting that Members of Congress are only allowed to read the implementing agreement in a “super-secret secured location” where they are forbidden to take notes).