

## The Possible Military Dimensions of Iran's Nuclear Program

December 2015

### EXECUTIVE SUMMARY

In order to build an effective monitoring, verification, and inspection regime, the international community needs a full understanding of the possible military dimensions (PMDs) of Iran's nuclear program and of the weaponization activities it has undertaken. The International Atomic Energy Agency (IAEA) typically tailors a country's verification program based on how far it has progressed towards building a nuclear device, which activities the country has mastered, and which expertise it has not yet achieved. The IAEA then creates choke points designed to prevent a country, in this case Iran, from progressing further towards a nuclear bomb.

While Tehran has been unwavering in its insistence that it never pursued nuclear weapons, the new IAEA report released on December 2, titled, "Final Assessment on Past and Present Outstanding Issues Regarding Iran's Nuclear Programme," concludes that *Iran did indeed engage in nuclear weapons-related work.*<sup>1</sup> Additionally, while Iran had previously committed, and recommitted again under the JCPOA, to cooperate with the IAEA to resolve long-standing concerns about PMDs, in certain cases, *Iran did not provide any new information and some of its answers are not credible.* If Iran is able to get away with half-truths and non-cooperation and still receive sanctions relief under the JCPOA, it sets a harmful precedent for enforcement of the nuclear agreement in the years to come. *The international community should require Iran to cooperate with the IAEA and resolve outstanding concerns prior to the provision of sanctions relief.*

### INTRODUCTION

Although the IAEA first raised concerns privately about possible military dimensions of Iran's nuclear program in 2002, its first public warnings of such a prospect came in 2008.<sup>2</sup> After Iran rebuffed U.N. Security Council resolutions requiring it to cooperate with the IAEA's investigation into PMDs, the Agency published a full list of its concerns in the annex to its November 2011

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1. International Atomic Energy Agency, "Final Assessment on Past and Present Outstanding Issues Regarding Iran's Nuclear Programme," GOV/2015.68, December 2, 2015. ([http://isis-online.org/uploads/isis-reports/documents/IAEA\\_PMD\\_Assessment\\_2Dec2015.pdf](http://isis-online.org/uploads/isis-reports/documents/IAEA_PMD_Assessment_2Dec2015.pdf))

2. International Atomic Energy Agency, "Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions 1737 (2006), 1747 (2007) and 1803 (2008) in the Islamic Republic of Iran," GOV/2008/15, May 26, 2008. (<https://www.iaea.org/sites/default/files/gov2008-15.pdf>)

report.<sup>3</sup> At that time, the IAEA said that its information “indicates that Iran has carried out activities that are relevant to the development of a nuclear explosive device” and that there were also “indications that some activities relevant to the development of a nuclear explosive device continued after 2003, and that some may still be ongoing.” Since 2011, Iran has failed to adequately address the IAEA’s concerns.

Alongside the Joint Comprehensive Plan of Action (JCPOA), Iran and the IAEA reached an agreement, the “Road-map for the Clarification of Past & Present Outstanding Issues,” requiring Tehran to work with the IAEA to resolve outstanding concerns regarding PMDs.<sup>4</sup> According to the JCPOA, by December 15, the IAEA is required to issue a “final assessment on the resolution of all past and present issues.”<sup>5</sup> The P5+1 negotiators committed under the JCPOA to then submit a resolution to the IAEA Board of Governors “with a view to closing the issue.”<sup>6</sup>

Experts have noted that the JCPOA and Road-map do not specify what Iran needs to do and how much information it needs to provide in order to fulfill its obligations.<sup>7</sup> What happens, for example, if the information that Tehran provided is unsatisfactory or insufficient to address the IAEA’s concerns? As one expert has asked, “Can Iran get away with what amounts to a simple box checking exercise in which Iran provides false civilian rationales for its various experiments and work?”<sup>8</sup>

In recent weeks, IAEA Director General Yukiya Amano indicated that he anticipated the forthcoming report would be inconclusive and noted that the Agency only had “pieces” of the “jigsaw puzzle.”<sup>9</sup> He stated that the report would lay out the facts but would not measure Iran’s “intention.”<sup>10</sup> Rather the P5+1 and the IAEA’s Board of Governors would be left to interpret it.

3. International Atomic Energy Agency, “Implementation of the NPT Safeguards Agreement and Relevant Provisions of Security Council Resolutions in the Islamic Republic of Iran,” GOV/2011/65, November 8, 2011. (<https://www.iaea.org/sites/default/files/gov2011-65.pdf>)

4. “Joint Comprehensive Plan of Action,” Vienna, July 14, 2015, Annex I, paragraph 66. ([http://eeas.europa.eu/statements-eeas/docs/iran\\_agreement/annex\\_1\\_nuclear\\_related\\_commitments\\_en.pdf](http://eeas.europa.eu/statements-eeas/docs/iran_agreement/annex_1_nuclear_related_commitments_en.pdf)); International Atomic Energy Agency, Press Release, “IAEA Director General’s Statement and Road-Map for the Clarification of Past & Present Outstanding Issues Regarding Iran’s Nuclear Program,” July 14, 2015. (<https://www.iaea.org/newscenter/pressreleases/iaea-director-generals-statement-and-road-map-clarification-past-present-outstanding-issues-regarding-irans-nuclear-program>)

5. International Atomic Energy Agency, Press Release, “IAEA Director General’s Statement and Road-Map for the Clarification of Past & Present Outstanding Issues Regarding Iran’s Nuclear Program,” July 14, 2015, paragraph 8. (<https://www.iaea.org/newscenter/pressreleases/iaea-director-generals-statement-and-road-map-clarification-past-present-outstanding-issues-regarding-irans-nuclear-program>)

6. “Joint Comprehensive Plan of Action,” Vienna, July 14, 2015, paragraph 14. ([http://eeas.europa.eu/statements-eeas/docs/iran\\_agreement/iran\\_joint-comprehensive-plan-of-action\\_en.pdf](http://eeas.europa.eu/statements-eeas/docs/iran_agreement/iran_joint-comprehensive-plan-of-action_en.pdf))

7. “Possible Military Dimensions,” *Institute for Science and International Security*, July 21, 2015. ([http://isis-online.org/uploads/isis-reports/documents/Possible\\_Military\\_Dimensions\\_Final.pdf](http://isis-online.org/uploads/isis-reports/documents/Possible_Military_Dimensions_Final.pdf))

8. “Possible Military Dimensions,” *Institute for Science and International Security*, July 21, 2015, page 3. ([http://isis-online.org/uploads/isis-reports/documents/Possible\\_Military\\_Dimensions\\_Final.pdf](http://isis-online.org/uploads/isis-reports/documents/Possible_Military_Dimensions_Final.pdf))

9. George Jahn, “AP Analysis: Final UN Iran Probe Report Likely Inconclusive,” *Associated Press*, November 30, 2015. (<http://news.yahoo.com/ap-analysis-final-un-iran-probe-report-likely-125914953.html>); George Jahn, “UN: No Clear-Cut Picture of Whether Iran Worked on Nukes,” *Associated Press*, November 26, 2015. (<http://www.houston-chronicle.com/news/nation-world/world/article/UN-No-clear-cut-picture-of-whether-Iran-worked-6659193.php>)

10. Yukiya Amano, “Evening Keynote Address,” *EU Non-Proliferation and Disarmament Conference*, November 11, 2015. (<http://www.iiss.org/en/events/eu%20conference/sections/eu-conference-2015-6aba/keynote-adress-e9c8/qa-ca94>)

When asked what the P5+1 would do next, State Department Spokesman Mark Toner reiterated that negotiators had “committed to submit a resolution to the IAEA Board of Governors with a view to closing the issue of PMD.”<sup>11</sup> Later, after the IAEA issued its report, Toner stated that the P5+1 were “submitting [a] resolution with a view toward closing the PMD issue and then after that we can focus on implementing the JCPOA.”<sup>12</sup> He confirmed that the Obama administration believes the report provides what is needed to close the issue.

Notwithstanding the fact that the IAEA report states that certain issues remain outstanding, these and other statements<sup>13</sup> indicate that the P5+1 will move forward to Implementation Day (likely in mid-2016) regardless of whether Iran has fulfilled its commitments under the JCPOA. This omission sets a dangerous precedent regarding the enforcement of the nuclear agreement.

## ANALYSIS OF THE FINDINGS OF THE IAEA REPORT

The IAEA’s report includes important findings regarding Iran’s previous nuclear-weapons related work:

“The Agency’s overall assessment is that a range of activities relevant to the development of a nuclear explosive device were conducted in Iran prior to the end of 2003 as a coordinated effort, and some activities took place after 2003.”

This conclusion refutes Iran’s statements that it has never worked on developing nuclear weapons. Moreover, it undermines arguments sometimes made by administration officials and others pointing to a reported *fatwa* from the supreme leader against nuclear weapons. Even after 2003, ***Iran did indeed have a nuclear weapons program and engaged in research relevant to the detonation of a nuclear bomb.***

While the IAEA concludes that “all activities in the Road-map were implemented in accordance with the agreed schedule,” the details of the report reveal that ***Iran provided very little actual cooperation.***

- *Procurement Activities:* When confronted with the IAEA’s information about the procurement of nuclear-related material, Iran denied purchasing it and “reiterated its earlier denial” that the material would have been for conventional purposes. The IAEA received no new information from Iran.
- *Nuclear Components for an Explosive Device:* When the IAEA asked Iran about information indicating it had “conducted preparatory work, not involving nuclear material, for the fabrication of uranium components for a nuclear explosive device,” Tehran denied it had

11. Mark C. Toner, “Daily Press Briefing,” *U.S. Department of State*, December 1, 2015. (<http://www.state.gov/r/pa/prs/dpb/2015/12/250212.htm#IRAN>)

12. Mark C. Toner, “Daily Press Briefing,” *U.S. Department of State*, December 2, 2015. (<http://www.state.gov/r/pa/prs/dpb/2015/12/250283.htm>)

13. Laurence Norman & Jay Solomon, “U.S. Set to Lift Sanctions on Iran,” *The Wall Street Journal*, December 2, 2015. (<http://www.wsj.com/articles/iaea-finds-some-iranian-nuclear-weapons-activity-continued-after-2003-1449078659>)

“conducted metallurgical work specifically designed for nuclear devices” and stated that it “was not willing to discuss any similar activities.”

- *Hydrodynamic Experiments:* On questions related to Iran’s manufacture of “simulated components for a nuclear explosive device” and specific testing related to nuclear explosive devices, “Iran did not provide any clarification.”
- *Preparatory Testing:* The IAEA received no additional information regarding allegations that Tehran conducted a number of preparatory tests related to nuclear weapons-testing.
- *Integration into a Missile Delivery Vehicle:* Prior to 2011, the IAEA had “extensive information” that Iran had conducted work related to securing a nuclear warhead onto a Shahab 3 missile. Based on Iran’s information, the IAEA verified the existence of workshops where the activities supposedly occurred, but Iran provided no additional information beyond the existence of these facilities.
- *Fuzing, Arming, and Firing System:* The IAEA also received no new information regarding allegations that Iran had developed a prototype firing system to enable the “payload for a Shahab 3 missile to explode in the air above a target or upon impact.”

Despite Iran’s lack of cooperation, ***the IAEA was able to confirm some of its previous information about Iran’s weapons-related work:***

- *Program Management Structure:* Despite IAEA evidence regarding the management structure of Iran’s nuclear weapons program, Tehran “denied the existence of a coordinated programme aimed at the development of a nuclear explosive device.” Still, the IAEA was able to confirm “a significant portion of the information” it had on the program management based on what Iran did provide.
- *Detonator Development:* The IAEA’s information indicated that Iran developed exploding bridgewire (EBW) detonators, which are used in nuclear devices. Iran and the Agency have held discussions on this issue for over a decade, and the Islamic Republic has consistently claimed that the EBW detonators are for conventional or non-military applications. The report indicates that the IAEA did not find the Iranian explanations convincing.
- *Initiation of High Explosives and Associated Experiments:* Regarding the explosive technology known as multipoint initiation (MPI), Iran reiterated its previous arguments that the technology was used for “an unspecified conventional military purpose.” The Agency however, determined that “the MPI technology developed by Iran has characteristics relevant to a nuclear explosive device, as well as to a small number of alternative applications.”
- *Hydrodynamic Experiments at Parchin:* The IAEA used commercial satellite imagery and remote-sampling (a non-standard IAEA procedure over which the Iran Task Force has

previously raised concerns<sup>14</sup>) to attempt to verify Iran's explanations of the activities at the Parchin military base. The IAEA's information indicated that the site had been used for nuclear weapons-related research, but Iran denied that such activity had taken place. Instead, Iran claimed that the buildings had been used for storage. The IAEA concluded that the information available "does not support Iran's statements on the purpose of the building" and that Iran's clean-up efforts at the site since 2012 have "seriously undermined the Agency's ability to conduct effective verification."

- *Modelling and Calculations*: With regards to "modelling studies on high explosives," which the IAEA notes are "only specific to nuclear explosive configurations," Iran stated that these activities were related to conventional military applications but that "it was not in a position to discuss them." Despite this lack of cooperation, the IAEA concluded that Iran "conducted computer modelling of a nuclear explosive device."

David Albright, a respected expert on Iran's nuclear program, and his colleagues at the Institute for Science and International Security concluded that as a result of Iran's lack of cooperation, and in some cases "outright ... efforts to deceive the inspectors," the IAEA report "broke relatively little new ground."<sup>15</sup> They also believe that *Iran's nuclear weapons program was likely "far more extensive than outlined" in the IAEA's report.*

## WHY PMDS MATTER

Prior to the announcement of the JCPOA, administration officials including Secretary Kerry committed that Iran would be required to resolve outstanding concerns as part of any final agreement.<sup>16</sup> Chief negotiator and then-Under Secretary of State Wendy Sherman testified before Congress that the P5+1 "have required that Iran come clean on its past actions as part of any comprehensive agreement." She continued, "All the sanctions ... will remain in effect until those concerns are addressed."<sup>17</sup> In the days after the announcement of the JCPOA, the administration instead reportedly told Congress, "An Iranian admission of its past nuclear weapons program is unlikely and is not necessary."<sup>18</sup>

Resolving PMD issues is not a matter of forcing a *mea culpa* or confession from Iran that it previously had a nuclear weapons program. Instead, *PMDs are critical for creating an effective verification, inspection, and monitoring regime.* According to Albright, a

14. Olli Heinonen, "Inspecting Parchin and Beyond," *Iran Task Force*, August 2015. ([http://taskforceoniran.org/pdf/Inspecting\\_Parchin\\_and\\_Beyond.pdf](http://taskforceoniran.org/pdf/Inspecting_Parchin_and_Beyond.pdf))

15. David Albright, Andrea Stricker, & Serena Kelleher-Vergantini, "Initial Reactions to the IAEA's PMD Report," *Institute for Science and International Security*, December 2, 2015. (<http://isis-online.org/isis-reports/detail/initial-reactions-to-the-iaeas-pmd-report/>)

16. "Full Interview: Iran Must Disclose Past Military Nuclear Activities for a Final Deal Says Kerry," *PBS NewsHour*, April 8, 2015. (<http://www.pbs.org/newshour/bb/iran-must-disclose-past-nuclear-military-activities-final-dealsays-kerry/>)

17. Wendy Sherman, "Negotiations on Iran's Nuclear Program," *Hearing before the Senate Foreign Relations Committee*, February 4, 2014. (<http://www.foreign.senate.gov/hearings/negotiations-on-irans-nuclear-program>; <http://www.shearman.com/~/media/Files/Services/Iran-Sanctions/US-Resources/Joint-Plan-of-Action/4-Feb-2014--Transcript-of-Senate-Foreign-Relations-Committee-Hearing-on-the-Iran-Nuclear-Negotiations-Panel-1.pdf>)

18. Jay Solomon, "Lawmakers Say Iran Unlikely to Address Suspicions of Secret Weapons Program," *The Wall Street Journal*, July 26, 2015. (<http://www.wsj.com/articles/white-house-says-iran-unlikely-to-address-suspicions-of-secret-weapons-program-1437953567>)

former weapons inspector, such information is essential to determining whether any weaponization activities are ongoing.<sup>19</sup> The IAEA also needs a full understanding of the history of PMDs and how far Iran got along the path to weaponization in order to determine which mechanisms it needs to put in place to ensure Iran does not resume weaponization, explains Olli Heinonen, former IAEA deputy director general and head of its Department of Safeguards.<sup>20</sup>

Furthermore, to verify that Iran has ceased its nuclear weapons-related activities, the IAEA needs detailed knowledge of the equipment, materials, sites, and procurement channels relevant to this work. The IAEA also needs information on the persons involved in the nuclear program, including Mohsen Fakhrizadeh, the Revolutionary Guard officer believed to have headed the suspected weapons-related work. Because nuclear programs are often segmented, with one department unaware of the activities of another, often it is only the heads of nuclear programs who have the complete picture.

Iran, however, has refused to allow the IAEA to interview Fakhrizadeh despite repeated requests. Under normal circumstances, the IAEA would use all of the information it gathers to build a comprehensive picture of Tehran's nuclear program, to evaluate which weaponization skills Iran has and has not mastered, and to assess where it can implement "choke points" to prevent Iran from developing new skills and knowledge related to weaponization.

Iran's non-cooperation with the IAEA hinders the Agency's ability to do its important work. Therefore, ***an effective verification regime cannot only concentrate on monitoring future activities. It must be founded on an understanding of the past.*** As explained by General Michael V. Hayden, former director of the CIA, "If the objective ... is to put distance between where the Iranians are and where they have to be to have a weapon, then we need a full accounting of the work they have done to date."<sup>21</sup>

Finally, ***a resolution of PMD issues is related to the credibility of the entire nuclear agreement.*** Are the P5+1 prepared to accept, at best, partial implementation of Iran's commitments under the Road-map and to continue on the path toward sanctions relief without addressing Iran's lack of cooperation? This would signal to Tehran that the P5+1 are not prepared to adequately enforce the JCPOA, and that intransigence and stonewalling pay off.

## CLOSING THE PMD FILE

In previous cases, it took the IAEA years to resolve concerns about the PMDs of other countries' nuclear programs. With Libya, the Agency took four years to address all of its outstanding concerns, and that was with full Libyan cooperation.

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19. David Albright, "Joint Comprehensive Plan of Action (JCPOA): Non-Proliferation, Inspections, and Nuclear Constraints," *Testimony before the Senate Foreign Relations Committee*, August 4, 2015. ([http://isis-online.org/uploads/conferences/documents/Albright\\_SFRC\\_Testimony\\_August4\\_2015\\_Final.pdf](http://isis-online.org/uploads/conferences/documents/Albright_SFRC_Testimony_August4_2015_Final.pdf))

20. Olli Heinonen, "Strengthening the Verification and Implementation of the Joint Comprehensive Plan of Action," *Foundation for Defense of Democracies*, November 2015. ([http://www.defenddemocracy.org/content/uploads/documents/Strengthening\\_Verification\\_JCPOA.pdf](http://www.defenddemocracy.org/content/uploads/documents/Strengthening_Verification_JCPOA.pdf))

21. Michael V. Hayden, "Examining what a Nuclear Iran Deal Means for Global Security," *Testimony before the House Committee on Foreign Affairs*, November 20, 2014, page 3. (<http://docs.house.gov/meetings/FA/FA13/20141120/102758/HHRG-113-FA13-Wstate-HaydenM-20141120.pdf>)



***the P5+1 should submit a resolution to the IAEA Board of Governors affirming the Agency's right to continue to investigate outstanding concerns regarding weaponization.***

As part of the IAEA's multi-year investigation – and ongoing verification – to reach a so-called “broader conclusion” that Iran's nuclear program is entirely peaceful and declared, it should continue to revisit PMD issues. Any Board of Governors resolution regarding the new IAEA report must preserve and affirm this right.

## RECOMMENDATIONS

While P5+1 officials have stated that PMD issues must be resolved before Implementation Day, the JCPOA text is not precise on the matter and does not directly link the timing of that day to the IAEA's ability to resolve all outstanding issues. Troublingly, the JCPOA stipulates no specific consequences for Iran's lack of cooperation with the IAEA. It is implied, however, that Implementation Day will occur at least a few months after the December 15 deadline for the Iran-IAEA Road-map based on experts' estimates of how long it will take Iran to dismantle its excess centrifuges, reduce its stockpile of low-enriched uranium, and fulfill its other obligations. ***The P5+1 can address this gap by affirming that under the terms of the JCPOA Iran will not receive sanctions relief until all of the international community's outstanding concerns are resolved.***

Similarly, ***Congress should pass legislation stipulating that Iran's cooperation with the IAEA failed to meet an acceptable benchmark*** and that it therefore does not believe Tehran has met its requirements under the Road-map and JCPOA.

***This legislation should also state that Congress does not believe that Iran should receive sanctions relief until the international community's concerns about PMDs are addressed.*** While Congress may not be able to block most sanctions relief, this legislation would likely have a chilling effect on the market, causing foreign companies to move more slowly to reenter Iran. As this Task Force has analyzed previously, it will be difficult to “snap back” sanctions in the future and convince companies to relinquish their investments in Iran after returning to its market. Therefore, a slower re-entry provides the P5+1 with greater leverage to enforce the agreement.<sup>25</sup>

Legislation should also include reporting requirements ensuring that Congress is provided with regular, thorough updates on the IAEA's progress toward resolving PMD issues and its longer-term efforts to reach a broader conclusion about Iran's nuclear program.<sup>26</sup>

25. “The ‘Snapback’ Sanction as a Response to Iranian Non-compliance,” *Iran Task Force*, January 2015. ([http://taskforceoniran.org/pdf/Snapback\\_Memo.pdf](http://taskforceoniran.org/pdf/Snapback_Memo.pdf))

26. For more details about other reporting requirements that this legislation could include, see David Albright, “Joint Comprehensive Plan of Action (JCPOA): Non-Proliferation, Inspections, and Nuclear Constraints,” *Testimony before the Senate Foreign Relations Committee*, August 4, 2015. ([http://isis-online.org/uploads/conferences/documents/Albright\\_SFRC\\_Testimony\\_August4\\_2015\\_Final.pdf](http://isis-online.org/uploads/conferences/documents/Albright_SFRC_Testimony_August4_2015_Final.pdf))



## CONCLUSION

A major shortcoming of the JCPOA is that it does not explicitly mandate that Iran cooperate with the IAEA's investigation prior to receiving sanctions relief. However, it is a reasonable interpretation of the JCPOA's timeline that the P5+1 intended PMD issues to be resolved prior to Implementation Day. *Congress, the U.S. Government, and the P5+1 should, therefore, provide no sanctions relief until Iran provides correct and complete responses to outstanding concerns about the possible military dimensions of its nuclear program.*

The Iran Task Force's goal is to lend expertise to the legislative branch on Iran's internal politics, nuclear science, and the multi-faceted U.S. and global sanctions regime against Iran. This group of former government officials and nuclear, legal, and sanctions experts provides advice and recommendations to policymakers in order to block Iran's uranium and plutonium pathways to a nuclear weapon.

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