



Iran's Newly Produced Low Enriched Uranium Hexafluoride: Definitely not Converted into Uranium Dioxide

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Under the Joint Plan of Action (JPA) Iran was expected to convert all newly produced LEU hexafluoride (LEUF_6) into uranium dioxide (LEUO_2), in order to ensure that the material was in a more proliferation resistant form and that Iran did not accumulate additional stocks of LEU hexafluoride at the end of the interim period of the JPA. This period has been extended twice so far, with the last period ending on June 30, 2015. The JPA provision is:

"Beginning when the line for conversion of UF_6 enriched up to 5% to UO_2 [uranium dioxide] is ready, Iran has decided to convert to oxide UF_6 newly enriched up to 5% during the 6 month period [and its extensions], as provided in the operational schedule of the conversion plant declared to the IAEA."

However, the IAEA's [recent report](#) on the implementation of JPA shows that only 9 percent of Iran's stockpile of newly produced LEU hexafluoride has actually been converted into uranium dioxide form.

The IAEA reports that since January 20, 2014 until June 30, 2015, Iran produced 4,293 kilograms (kg) of less than 5 percent LEU hexafluoride. As of June 30, 2015 Iran's cumulative stock of 3.5 percent LEU hexafluoride is 7,537 kg.¹ Therefore, Iran has met part of its commitment in the JPA to feed its newly produced LEU hexafluoride into the Enriched UO_2 Powder Plant (EUPP) plant. Yet, of this LEU, only 260 kg (uranium mass) of dioxide has emerged, or an equivalent of 390 kg of LEU hexafluoride, which is 9 percent of what was expected. The remainder of the material remains in intermediate forms in the EUPP conversion plant.

According to an anonymous U.S. official [interviewed](#) by the Associated Press, the remainder of the material in the conversion pipeline "has been transformed into another form of the oxide that would be even more difficult to reconvert into enriched uranium." This intermediate form is likely ammonium diuranate (ADU), but it is not the oxide intended as the final form. Moreover, its difficulty of conversion back to uranium hexafluoride has been disputed by an expert we queried. However, this issue is not about the proliferation resistance of the LEU forms. It is about shifting criteria in the JPA.

¹ This amount includes 115.6 kg of LEU hexafluoride resulting from the downblending of a portion of Iran's previous near 20 percent LEU stock.

When it became clear that Iran could not meet its commitment to convert the LEU into uranium dioxide, the United States revised its criteria for Iran meeting its obligations. In this case, the potential violation refers to Iran not producing the enriched uranium dioxide by the end of the initial six month period of the JPA and again after its first and second extensions. The choosing of a weaker condition that must be met is not a good precedent for interpreting more important provisions in a final deal.

This case poses several other potential problems about the enforcement of a final deal with Iran. The United States accepted an unproven technical method for converting the LEU. Is it doing so now in a final deal? Are the technical methods in the final deal reliable? Iran will need to reduce, by shipping out of Iran or blending down to natural uranium, a much larger amount of roughly 10,000 kilograms of LEU down to a 300 kg cap within a matter of months. The U.S. government [handling](#) of the case of the newly produced LEU under the JPA leads to legitimate doubts about how well that major endeavor will go.