PHYS 280 Writing Lab 5

Monday, Feb. 24

Key Requirements and Actions Mandated by the JCPOA	
Enrichment	• For 10 years operating centrifuges reduced to 5,060 IR-1 machines, total machines is 6,104 IR-1s • Excess centrifuges (over 13,000) dismantled and stored under IAEA monitoring • For 15 years level of uranium enrichment capped at 3.67 percent uranium-235 • For 15 years enrichment only at Natanz • For 10 years no production of additional IR-1 centrifuges • Between years 11-13 Iran can replace IR-1s with the equivalent capacity of IR-6 and IR-8 machines and limits lasting to years 14-15
Uranium Stockpile	• For 15 years the stockpile is kept under 300 kilograms of 3.67 percent enriched uranium in total (all forms) • Excess enriched uranium sold, shipped abroad for storage, or diluted to natural uranium levels • Uranium oxide and scrap material enriched up to 20 percent fabricated into fuel for Tehran Research Reactor, blended down, or shipped out
Fordow	• Converted to research facility for stable isotope production with Russian cooperation • 1,044 IR-1 centrifuges in six cascades will remain here, 328 for production, the remaining 700 are idle • For 15 years no introduction of uranium at the facility
Advanced Centrifuge Research and Development	• For 8.5 years Iran may conduct research with uranium on a single IR-4, IR-5, IR-6 and IR-8 centrifuge at Natanz • After 8.5 years test up to 30 IR-6s and 30 IR-8s • After 8 years manufacture up to 200 IR-6s and 200 IR-8s centrifuges without rotors • For 10 years Joint Commission review and approval of changes to the research and development plan
Arak Reactor	• Remove and disable the original core of the Arak reactor • Replace the core of the Arak reactor to reduce weapons-grade plutonium output, certified by the Joint Commission • For 15 years no reprocessing of spent nuclear fuel with an intention to never reprocess • Permanent commitment to ship out spent nuclear fuel • For 15 years no heavy-water reactors in Iran • For 15 years no accumulation of heavy water in Iran • Construction of hot cells or shielded glove boxes of certain specifications subject to approval of the Joint Commission
Monitoring and Verification	• By 15 October 2015 Iran fully implements PMD "roadmap" agreed with IAEA • For 10 years approval of the purchase of dual-use materials by the Joint Commission working group • For 25 years continuous monitoring of Iran's uranium mines and mills • For 20 years continuous monitoring of Iran's centrifuge production facilities • For 15 years Joint Commission oversight of IAEA access requests to inspect undeclared sites • Permanent prohibition of certain weaponization related activities • Implementation and eventual ratification of an additional protocol to Iran's safeguards agreement • Permanent implementation of modified Code 3.1 of the Subsidiary Arrangements to its Safeguards Agreement

Practicing Thesis Statements & Introductions

Thesis Statement

- Clear
- Arguable
- Interesting
- Informed

Introduction

1. Provides a context (broad but not too broad) for the problem being investigated (what is it? why does it matter? what's your angle / how are you approaching it?)
2. Implies or states a research question -- identifies a gap in our understanding
3. Answers research question directly with a thesis statement
4. Forecasts the organization of the body of the report in a final sentence ("launching point")

Sample RE3v1 Introduction

[context] Since the Joint Comprehensive Plan of Action (JCPOA) agreement became public knowledge in 2015, Americans and citizens of other UN Security Council nations have become increasingly aware that non-nuclear countries could develop nuclear weapons under the guise of benign industry. To counter this concern in the case of Iran, permanent Security Council members and member nations of the EU negotiated the Iran nuclear agreement (JCPOA), restricting Iran's development and use of heavy water reactors, centrifuges, and the reprocessing of spent nuclear fuel. **[research question]** Were these measures technologically necessary and sufficient to contain Iran's nuclear threat? **[thesis]** To ensure global and national security, this report suggests continuing to limit Iran from developing and retaining certain nuclides with high potential for the creation of nuclear weapons. **[transition followed by "launching point"]** Congressional review is required to execute the suggested procedures. To assist in this review, the following report explains how the materials used in the manufacture of nuclear weapons are developed, the weapons designs into which they are incorporated, and whether and how civilian nuclear technologies use can pose a threat by doubling as platforms for weapons development.

Arak Heavy Water Reactor & Natanz Uranium Enrichment Facility

source

source

centrifuges