Mitigating Risks of Naval Nuclear Fuel

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Background

- Part of a larger project funded by MacArthur Foundation on building norms to reduce risks from fissile material
  - How to enhance transparency and separation (civil/military) of facilities and materials in nuclear weapon states
  - Norms for civil plutonium (mostly in East Asia)
  - Norms for naval nuclear fuel
What do I mean by building norms?

- Support for or adoption of approaches or policies that are not legally binding
- Nonproliferation regime relies on norms where legal limits are not (yet) in place
  - Nuclear testing
  - Declarations on civil plutonium
Naval Nuclear Fuel Context

- Nothing more sovereign than fuel cycle decisions and navies, separately or together
- Precisely because of this, don’t look for legally binding limits on naval nuclear fuel any time soon
- Yet, three outstanding reasons to consider some form of limits
  - Growing norm for minimizing/eliminating HEU in civil sector
  - FMcT
  - New naval programs
Purpose of Workshop

- Feedback on distributed papers and presentations today
- Not just US perspective but international
- Brainstorming for future approaches
Question for today

- Are there norms for naval nuclear fuel that will help
  - Clarify the gray zone of monitoring (as yet untried) under the NPT
  - Simplify future verification of a fissile material treaty
- Objective is to mitigate risks from naval nuclear fuel now and in future
Structure of workshop

- Morning: Setting Baseline
  - “Presenters” but just a jumping off point
- Afternoon: Vetting Ideas
- Meant to be a fluid discussion
Administrative notes

- Chatham House rules
- Wifi password
Baseline: Naval Nuclear Fuel Programs in Nuclear Weapon States

- The big two: US & Russia
  - US has largest nuclear submarine force; Russia is second;
  - China roughly equivalent with UK & France
- Differences in other kinds of ships
  - Whether naval nuclear reactors used for aircraft carriers, other platforms
- Differences in stockpiles
  - US, Russia with vastly larger stockpiles of HEU
Enrichment levels

- US, UK at the high end -- >90% HEU
- Russia, India in the mid-range – 40-50% HEU
- China, France at lower end -- ~ <10%
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