The Arc of the Impossible: From Resistance to Dependence

The Remarkable Story of how the Grand Uranium Bargain Succeeded

Despite U.S. Division and Soviet Upheaval

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“It’s a clever idea,
but it will never happen.”

- *National Security Council response to Tom Neff,*
October 1991

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“Tennis more than any other sport, is a game of momentum.”

- *Chuck Kriese, Total Tennis Training*

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Tom Neff's Elegant Solution: Turning a Problem into an Asset

The core of the idea was a bold nuclear proliferation solution

- For the first time, nuclear weapons would be destroyed, not simply moved into storage.
- Placing a hard currency value on the HEU would motivate command and control of nuclear material.
- "The material is worth more than its weight in gold if used for civil nuclear fuel."

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Tom Neff's Elegant Solution: Turning a Problem into an Asset

A security solution with an economic rationale

- Tom's idea would pay for disarmament in the Soviet Union.
- Tom's solution was intended to stabilize market prices and lower operating costs at DOE's plants.
- Dismantling bombs and blending down the fissile material for sale would provide conversion of the Soviet Military Industrial Complex (MIC) to civilian manufacturing at scale.

Brotherhood of Scientists

- “It just happens that there’s this meeting coming up, and why don’t you join us?”- *Frank von Hippel to Tom Neff, October 1991*

- “There was general agreement that the HEU recovered from nuclear warheads should be used as reactor fuel.” - *Conclusions of the International Workshop on Verified Storage and Elimination of Nuclear Warheads, October 18-19, 1991*

- “How much could I sell?” – *Victor Mikhailov to Tom Neff*

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A Grand Uranium Bargain

Thomas Neff, The New York Times, October 24, 1991

- “The Soviet Government is struggling to transform itself economically and politically while maintaining control of more than 24,000 nuclear weapons in the newly independent republics.”

- “The warheads contain substantial amounts of valuable material that can be processed for use in commercial nuclear power plants.”

- “If we do not obtain the material, agents in the former Soviet Union…may flood commercial nuclear fuel markets with material from arms programs or even seek to sell weapons-grade materials to the highest bidders.”

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Publication provided the catalyst for dialogue between the two sides, with Tom as an intermediary

- “If there is little political control, hard currency may be the best tool to induce internal cooperation in disarmament, as well as commercial discipline.”

- “Today, we must help provide the tools for a weak center to influence developments on both security and commercial fronts.”

- “It is likely that the Soviets hold substantial stockpiles of…uranium. The proposal should allow for immediate purchase of this material.”

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A Divided Bush Administration

- Events were happening fast.
- Principle #6: Central control over nuclear weapons, and safeguards against internal or external proliferation
- “By the grace of God, America won the Cold War.”

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Tom's Idea Gained Its Own Momentum

- **Nov 1991** DOE secret task force
- **Jan 1992** U.S. and Russian agency officials met in Moscow.

The U.S. would likely buy the Russian HEU

- **Jan 1992** Baker noted that Yeltsin's idea would appear to be in the mutual interest of both sides.
- **Feb 1, 1992** Yeltsin proposed turning Russian weapons grade uranium into "cakes" useable for power stations. Bush responded,

"Let's follow up on this."

All the technical details had been worked out.

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The Challenge: Implementation Across Multiple Agencies

- “While the Russian side was in an unstructured debate, the U.S. was bureaucratically overstructured, with that structure still reflecting Cold War assumptions.”

- “Any effort to engage with Russia on HEU would also require a great deal of interagency coordination at a time when there was not yet a coherent approach to post-Cold War Russia.”

Tom's objective became one of getting Russia to make a proposal to the U.S.

- "Coming to a decision on Russian HEU would require a much larger U.S. debate on overall post Cold War policy."
- "The U.S. interagency process has not resulted in any agreement on how to act."
- State received a message from Victor Mikhailov proposing to sell LEU from HEU – Tom's crazy idea!

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A cautious Bush administration took on the boldest nuclear nonproliferation program in history

- **Aug 25, 1992** The U.S. presented a draft intergovernmental agreement to the Russian side.

  The intergovernmental agreement was initialed by both sides 3 days later.

- **Jan 1993** Bush urged Yeltsin to sign the government-to-government agreement.

- **Feb 18, 1993** The intergovernmental agreement was signed.

- **Jan 1994** The HEU purchase implementing contract was signed

- **Jun 1995** The first shipment of Russian blended down HEU was delivered to the U.S.

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Megatons to Megawatts: Results

- In 1991, the U.S. and the Soviet Union held roughly 60,000 nuclear weapons.
- The HEU Deal destroyed 20,000 Russian nuclear weapons. This reduction in the number of Russian weapons allowed the U.S. to destroy more than 14,000 of its own.
- 500 MT of Russian HEU was blended down and sold to U.S. nuclear power reactors.
- The HEU Deal powered 10% of U.S. electricity over 20 years

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Megatons to Megawatts 2.0?

"The beauty of the HEU Purchase Agreement was it set a precedent that it can be done. No one can come back and say that's impossible."

- Greg Dwyer, Department of Energy

The Potential to help shape a safer and more productive world

“I think there are always opportunities. There are always people who see something that can be fixed. The average college graduate will probably have an opportunity in his or her life to do something that actually improves things.

The trick is recognizing it.”

- Tom Neff

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