

Accessing the Inaccessible: The Case for Opening Up Russia's Closed Cities

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Today the better minds are seeking abroad what they had an excess of in the USSR--satisfaction.

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The selling of weapons-related nuclear knowledge by Russian scientists for economic gain constitutes a threat to US national security. Some estimate that the number of Russian scientists seeking permanent employment abroad constitutes five to ten percent of all researchers who have left the field of science in Russia. Moreover, there is concern that those who have left are "the better minds." The issue of brain drain concerns not only those who move abroad permanently, but those who still reside in Russia and travel abroad to sell their knowledge. Of particular concern to the US is the potential sale of weapons of mass destruction (WMD) knowledge by some.

To "mitigate the risk that economic difficulties...might create the temptation for individuals or institutes to sell expertise to countries of proliferation concern and terrorist organizations," the Department of Energy (DOE) launched a Nuclear Cities Initiative (NCI) in 1998 with the goal of creating commercial jobs and economic diversification in the ten closed cities that form the core of Russia's nuclear weapons complex to accommodate the loss of employment in the nuclear weapons industry. However, unless Russia increases access to the areas of its closed cities that are, or could become, involved in commercial activities--while of course carefully controlling access to the sensitive areas of the institutes and laboratories--economic development will be stymied.

Background

As the Soviet Union and then Russia began to decrease the size of its nuclear stockpile in the late 1980s and early 1990s, the impact was felt keenly by the families of the dedicated scientists, engineers, technicians, and other individuals working at the various sites that formed the Russian nuclear weapons complex. The backbone of this complex is ten cities critical to the design, construction, testing, and production of the nuclear weapons

arsenal. The cities are under control of the Russian Ministry of Atomic Energy (Minatom) and currently have a population of roughly 800,000 people. These gated and well-guarded cities have been closed to the outside world since their formation in the late 1940s, their existence not even acknowledged on maps. The importance of these closed cities--or as the Russians call them, closed administrative and territorial entities or ZATOs--to the nation's nuclear mission meant that the residents were well provided for and did not experience the shortages of foods and goods that characterized the plight of the average Soviet citizen.

These isolated cities are unique. Unlike the US, which eventually opened up its closed cities, separating the scientific institutes from the city infrastructure (Los Alamos being the most famous example of our early closed cities), the Soviet Union and then Russia kept the cities closed. This means that all commercial activities as well as the entire city infrastructure of social services, schools, medical care, recreation, law enforcement, and so on are located behind barbed wire fences.

The Nuclear Cities Initiative Today

The end of the Cold War has brought about a decrease in the size of the Russian nuclear arsenal and therefore reduced production requirements. As a result, the Russian closed cities must cope with a reduction in the scope of their primary mission and the need to develop new missions. During the first phase, NCI activities have focused on three closed nuclear cities: Sarov (formerly Arzamas-16), Snezhinsk (Chelyabinsk-70), and Zheleznogorsk (Krasnoyarsk-26). Each of these cities has been partnered with a US National Laboratory and a production site. The US National Laboratories were a perfect starting point because of the unique relationship that has developed between the scientists and engineers of the two countries over the past decade.

Although the US national laboratories have also experienced downsizing and have had to develop new missions, fewer opportunities exist for Russian scientists than their US counterparts because Russian personnel frequently lack the funds to move to open cities and have never had to compete in a market-based system. As a result, they are stuck in isolated communities that do not understand the basics of a market economy. NCI and the US National Laboratories are serving as a bridge between the Russian closed cities and industry. NCI is facilitating the creation of commercial enterprises by engaging private industry to help develop successful commercial partnerships in the nuclear cities. The Initiative also helps identify potential projects and outstanding Russian scientific personnel, but the program is more than a matchmaker.

Training is a key component of NCI, as it helps the cities better understand the underpinnings of capitalism. The ultimate goal is to "create the conditions required for economic diversification and sustainable job creation." NCI helps reduce the costs to potential business partners by providing seed money, telecommunication facilities, and business start-up experts to the closed cities.

Kidney Dialysis Equipment in Sarov

An example of NCI's ability to leverage the technical know-how of the US National Laboratories to bring together private industry and Russian scientific knowledge is seen in the Renal Technology Project at the Avangard Electrochemical Plant (hereafter referred to as Avangard) located in the city of Sarov. The goal of the project is to develop an economically viable manufacturing and advanced product development capability for renal technology. The Avangard Plant was established more than 50 years ago and was the first Soviet facility to manufacture nuclear weapons on an industrial scale. Under NCI, Avangard partnered with Lawrence Livermore National Laboratory (LLNL) and identified medical technology parts manufacturing as a "business opportunity within its core capabilities." Avangard had been designing renal technologies for ten years. The plant had manufactured three versions of a dialysis machine and was looking to improve its design for sale on the world market. LLNL brokered a relationship between Avangard and one of the world's largest makers of dialysis equipment, and helped educate Avangard officials regarding Western business practices.

Most importantly, at the urging of NCI, the Avangard Plant moved its solid concrete perimeter security system back more than one mile. Moving this barrier (commonly referred to as "the fence") freed up four weapons manufacturing buildings for commercial use and contributed to the creation of a 10-acre industrial park within the city of Sarov. The buildings will be modified in order to install production lines for dialysis components.

It is believed that the project will eventually employ 500 former weapons builders in the daily production of parts for dialysis machines and, eventually, in the construction of complete dialysis systems. DOE has committed money for facility renovations and infrastructure costs.

The Problem of Access

In order for the Renal Technology Project and all NCI projects to be viable, however, NCI needs more access to the cities. Two issues critical to the success of such projects remain. First, NCI needs to make frequent visits to the sites with enough individuals to effectively carry out NCI project development work and monitor activities. Industry also needs to make numerous visits. The Russians are concerned that too many individuals are visiting the sites and that the visits are too frequent. Minatom's limitations on the number of people and the number of visits to a site can be debilitating.

The second issue is the long lead-time required for visits to be approved. Industrial partners not only need access to the production lines, they need timely access. Should something break or require immediate attention, companies cannot afford to wait for days to gain access to the plant. Production downtime translates into loss of profits. In the era of "just-in-time" production lines, no company can afford to wait to fix problems.

Conclusion

The NCI mandate of job creation and infrastructure and community development requires strategic planning and continual communication and cooperation between NCI representatives and the cities. Creating a vigorous and enterprising program requires multiple visits by large numbers of people, and this must become the norm. NCI does not seek routine access to areas containing classified nuclear research and production facilities. Rather, its goal is to introduce international industry representatives to the immense scientific talent residing in the Russian closed cities in hopes of creating jobs within Russia. Expecting industry representatives to wait for approval to enter the city to develop strategic plans, negotiate contracts, or fix production lines will lead to missed opportunities for workers in the isolated and closed cities of the Russian nuclear weapons complex.

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