Directors of the Apocalypse: A Tale of Russo-Soviet Nuclear Mismanagement

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Immediately following the explosions at the Chernobyl nuclear plant in 1986, Soviet firemen rushed to the scene – most without protective gear, as they'd been told that the fire at the plant was no different from any other. So, trusting in their superiors and the government that sent them in, they advanced through the flames without hesitation. Firefighting was their occupation, after all. But there was something present that couldn't be contained, that for which helicopters continuously flew overhead, dumping water and graphite into the center of the reactor itself, attempting to quell its spread: radiation. Most citizens of Pripyat – who were the first at the scene – didn't even know what radiation was. When first described to them, they thought perhaps it was something that could be seen, like a dark, smoky cloud. So, when the firefighters began to get sick, few truly understood what was happening. One wife after another would push past doctors and plastic screens to hold the head of her husband who could barely lift it himself. Mothers didn't care about the danger posed by being near their sons, even as they observed the extensive protective measures taken by the doctors caring for them. They would have followed them into the ground if not held back. The bodies of the firemen – who died slowly, over the course of weeks after the accident – were placed in bags, then in boxes, which were tied up in new bags, all of which were then placed in zinc coffins, with the lids welded shut. These metal sarcophagi were set in the ground and promptly covered in a few feet of concrete. When families were still reeling from the loss of loved ones, columns of soldiers began to enter their towns – they were now living in a contaminated zone, and they needed to leave immediately.[1]

Years after the fact, a former Russian soldier speaking with a journalist recalled his role in a unit tasked with clearing out Pripyat after the Chernobyl nuclear disaster: "I have my own memories. My official post there was commander of the guard units. Something like the director of the apocalypse. *[Laughs.]* Yes. Write it down just like that."[2] The boots on the ground weren't really in charge of course, but someone, somewhere must have been responsible for the Chernobyl disaster – and, for that matter, for the sinking of the Kursk, for the cities, towns and villages near reactors that became unlivable, and for the rampant waste that gave the USSR and later Russia the only half-joking moniker of "nuclear wasteland." How, exactly, were the nuclear arsenal and waste of the USSR and the early Russian Federation so brazenly mismanaged? This isn't only a theoretical, historical quandary. The threat of terrorism or, at the very least, environmental destruction is still very real in Russia, and both could very well become problems for other nuclear capable states.

Not every nuclear capable state is in danger of becoming ground zero of the apocalypse, of course. The United States, for example, having successfully decommissioned some of its own nuclear forces during periods of arms reduction – at great cost to itself – also shoveled money at the USSR's haphazardly constructed and horrifically underfunded decommissioning program in an attempt to prevent loosely contained nuclear material from becoming a security threat.[3] The origin of Soviet nuclear mismanagement can be traced back to some of the same problems that lead to the state's collapse in 1991. In short, those at the head of the authoritarian regime in Moscow and those closely connected to them were able to manipulate the power, influence, and infrastructure of a large, resource rich state at the cost of the lives and well-being of some of the most disadvantaged segments of the Soviet population. This use and abuse of power can be seen in variety of areas covering both the USSR and the Russian Federation, including the lack of a framework or funding for a nuclear decommissioning program, a strong military complex that was left free to operate as it pleased, the suppression of public opinion – which continues – and more recently,

manipulating the international system to its advantage. What follows will address these areas of the Russo-Soviet authoritarian regime, as well as the implications for other countries that waver between democracy and authoritarianism – to explore this quandary, Pakistan will be discussed. First, a short overview of the Soviet nuclear program itself is warranted in order to have a sense for the gargantuan task of beginning to dismantle this structure at the end of the Cold War.

Historical Context – Racing to Excess

After World War II, the United States and the USSR entered a fierce arms race, with the Soviets lagging slightly behind as the Americans basked in their head start, enjoying a short period of complete and total global nuclear supremacy. Nonetheless, the Russians were able to quickly claw their way to near parity with the United States – possibly due to the aid of Klaus Fuchs, who may or may not have shared secrets of American superweapons with the Soviets.[4] Nonetheless, the race left the Soviets with hundreds of SLBMs (Submarine Launched Ballistic Missiles) and over one thousand ICBM (Inter-Continental Ballistic Missile) launchers by the mid-1970s.[5] The Soviet nuclear program itself was incredibly secretive, with limited information only coming out recently as Russian scholars are now allowed to dive into old Soviet records and documents. The only reason that the United States managed to track the Soviets' successful detonation of their first fission bomb was because the United States – ever suspicious and cautious – had set up its own long-range detection system. The Soviet Union didn't even publicly acknowledge its test until after President Harry Truman told Americans weeks later that the United States had caught the Soviets red-handed. Otherwise, the USSR may not have given any indication of their successful detonation at all, preferring to operate under the radar.[6] This preference for secrecy was not, of course, unique. The United States and the USSR were essentially punching at each other in the dark, with no sure way to know the exact capabilities of their enemies' forces. So, stockpiling and continuing to advance to more and more destructive weapons and higher numbers of warheads – far more than necessary to wipe the other state off the map – was par for the course.

But by 1993, three hundred nuclear reactors torn from the bellies of submarines were floating idly in Russian waters. After the fall of the Soviet Union and the end of the Cold War, a combination of arms control treaties left the Russians attempting to decommission more than one hundred nuclear powered submarines in the span of under a decade. Massive stockpiles of missiles and warheads faced a similar fate.[7] Unfortunately, the Soviet regime had paid little mind to a plan for eventual decommissioning – the first of many pitfalls for modern Russia left by the authoritarian socialist Soviet regime.

Areas of Impunity and Manipulation
Lack of Infrastructure and Foresight in a Brazen Military Complex

In the early 1990s, the Russian Navy was unceremoniously tossed the task of decommissioning dozens of its nuclear submarines. Naval officers and command were, to say the very least, wildly unprepared for such an undertaking. The submarines had been constructed with almost reckless abandon with the goal of simply pumping as many vessels into the sea as possible. Only when the time came to reduce their number did officers begin to complain that the submarines had been built "without a thought to the future."[8] Every step of the decommissioning process quickly became a problem. Removing the nuclear fuel, taking apart the submarines so that parts could be transported to be scrapped, and safely disposing of all of the radioactive materials were all made more difficult by the complete lack of existing infrastructure. To start the deconstruction process, tow boats, modified cargo ships, scrap yards and repositories all had to be built to transport and store materials. But money for such projects simply wasn't available.

Funds were stretched thin across the entirety of the newly minted Russian Federation, and the decommissioning of nuclear submarines was nowhere near a top priority. Part of the burden fell to Russia's irritated Scandinavian neighbors, with many of them eventually funding the removal of the spent nuclear reactors from the waters that they shared with Russia. Letting hundreds of large, nuclear-contaminated metal objects simply soak in the Baltic seemed like a radically poor decision to Russia's neighbors, but it was the best that they could manage at the time. The reactors by themselves – at two per submarine – were less likely to sink into the sea accidentally than the whole submarines, and the Navy was able to avoid the cost of maintaining the submarines until they could be decommissioned.[9]

In context, the floating reactors begin to become an understandable compromise, but the fact that such a compromise was needed is telling. While stockpiles of warheads weren't left quite as exposed, solutions to analogous problems in taking apart, transporting, and storing materials were similarly slow to develop due to a comparable lack of funding. The military's lack of foresight and constraint was not only the source of problems after the close of the Cold War, but was to blame for a great deal of contamination across the USSR during the war.

Through a combination of rampant nuclear testing and nuclear weapons production facilities that operated without a thought given to the environment, huge swaths of the Soviet Union – especially non-Russian areas around Ukraine, Belarus, and Kazakhstan – were left almost irrevocably contaminated. The areas of the Russian Federation that are the most environmentally devastated today are where nuclear facilities once sat or, in some cases, still operate. At sites in Chelyabinsk, Seversk, and Krasnoyarsk, multiple reactors were used to create weapons-grade plutonium, with reprocessing and storage facilities installed alongside the reactors. At all three sites, nuclear waste would regularly be dumped into the surrounding rivers and lakes, or pumped underground. The rural populations around the factory grounds were unconcerned or unaware of the risk posed by remaining in such an environment. These weren't cases isolated by time or ignorance of environmental effects, either – the Chelyabinsk facility was still dumping nuclear waste into the surrounding waterways and underground in 2003. When the head of the plant was confronted, he claimed that Moscow simply hadn't provided any of the necessary funding to build the proper storage or disposal infrastructure to support their operations.[10] But the military still needed weapons, so the plant was obligated to comply and meet their quotas. Once the military got their hands on the weapons, more destruction took place.

On Novaya Zemlya alone, a large island north of the Ural Mountains, around 265 megatons of explosives were detonated, both in the atmosphere and below ground after the Limited Test Ban Treaty was put in place in 1963. The underground tests were disruptive enough to move glaciers and cause earthquakes and avalanches. This was in addition to the contamination that was introduced from radioactive fallout created by earlier tests.[11] The Semipalatinsk test site in Kazakhstan, where some of the first Soviet nuclear devices were tested, remains radioactive. Tests in the area would create fallout that would sometimes spread as far as Japan.[12] However, a large number of nuclear tests isn't damning in and of itself. The United States also carried out many nuclear experiments – with most Soviet tests simply echoing the latest American test. Nonetheless, the negligence of the Soviet military went even further.

Russian submarines – which, as discussed, became a different problem after the end of the Cold War – regularly dumped spent reactor fuel and nuclear materials into the ocean, wherever they happened to be when they felt the need to eject it. Again, American and Scandinavian funding had to come into play eventually to help clean up the environmental and security fiascos that this habit created.[13] The governments of both the USSR and the early Russian Federation simply couldn't be bothered to fund cleanup efforts. What's more, the Soviet whistleblowers who exposed the ongoing practice of dumping nuclear materials into the sea were arrested and tried on the basis of exposing state secrets.[14] The trial of these whistleblowers wasn't an isolated incident. Public opinion was heavily suppressed in the USSR, and even as the transition was made to the Russian Federation – a democracy – the voice of the people continued to be silenced or ignored.

Suppression of Public Opinion

There has always been a conspicuous lack of public outcry in response to the state of nuclear contamination in Russia. In America, protesters and anti-nuclear power advocates still point to the relatively harmless partial meltdown at the Three-Mile Island nuclear power plant in Pennsylvania in 1979 as evidence enough not to pursue nuclear power due to its inherent "danger." The amount of radiation that people were exposed to from the Three-Mile Island incident, if any, was roughly equivalent to that of a chest x-ray. Additionally, any radiation that made it to the atmosphere quickly dissipated.[15] Despite this, people who were vehemently against nuclear power plants made their opinions heard loud and clear, and continue to do so.

In the USSR, the Chernobyl disaster of 1986 did generate its own share of protesters, but very little was heard from those directly affected. There was a complete blackout of Soviet media in the days immediately following the explosions, so the first things that people heard were from Western sources that found out about what had taken

place and began to formulate reports. What was reported by American and Western European sources was dismissed by the Soviet government as political propaganda and lies. Locals in Pripyat were simply told that it was no longer safe, and that they had to leave. Many refused, or continued to operate normally, as they didn't have any idea of the danger they faced by remaining. Later, the government flipped its script, turning to scare tactics through both the media and through military personnel on the ground in an attempt to keep people away from the site while the government gathered itself and began to contain the radiation – over the course of decades.[16]

A new point of contention – rather, a point abnormally lacking in contention – arose when President Vladimir Putin enacted a law in 2001 which allowed spent nuclear fuel to be imported from abroad for temporary (in truth, permanent) storage. In a rare case of a unified public voice being heard, 90% of those surveyed were against such a policy. Millions of signatures of those against the new law were gathered in order to reach the level of an appeal to the government, only for tens of thousands of the signatures to be thrown out for arbitrary reasons. The issue was dropped, and the law was passed.[17]

Moving forward, one of the sites considered for the new international nuclear waste dump was Krasnoyarsk – formerly the site of a nuclear weapons reprocessing facility. Whether or not the citizens of Krasnoyarsk are chomping at the bit to be showered in spent nuclear waste from the west is unclear, as they've been eerily quiet on the issue. Many believe that their silence doesn't mean passive agreement, but rather is a signifier of a weak democracy that doesn't allow regular people to adequately express their opinions.[18] Russia, in the sense of the government, may have volunteered to take on nuclear waste, but those actually affected by its import have no way to deny this "opportunity." In fact, the only ones profiting from such an arrangement would be back in Moscow, not Krasnoyarsk.

The international community needs to decide if it will allow those at the top of the Russian Federation to throw its underprivileged citizens under the nuclear bus, and freely send their nuclear waste to the new repositories, or if states will hold Moscow accountable for the well-being of its people. Unfortunately for Krasnoyarsk, the international community doesn't have an excellent track record in standing up to Moscow – in many cases, enabling it to bend the rules in the nuclear sphere.

Manipulating the International System and Neglecting Security

As previously mentioned, the Soviet and Russian governments were and are content to let other countries foot the bill for nuclear safety and cleanup, often choosing to wait until a neighbor country is simply too agitated not to act. Most of Russia's Scandinavian neighbors have contributed funds in some way to clean up waterways and the Baltic Sea over environmental concerns, while the United States provides funding for decommissioning projects due to security concerns.[19] Additionally, despite the extensive security plan and high level of international cooperation and oversight required for a large multinational nuclear waste dump based in Russia, Moscow has been incredibly resistant to both international oversight and improving the security of its existing facilities.

At Russian nuclear storage sites, alarms are routinely ignored, doors are left open and unguarded, fences are easily broken and left unrepaired, corrupt officials often collude with thieves for their own gain, and the agency designed to monitor and curb these problems is severely underfunded and understaffed.[20] Despite these security concerns, and being used as funding lackeys for both the Soviets and the Russian Federation, many states are willing to look the other way in order to jettison all of their nuclear waste into Russia – and no longer have it be a problem of their own. In short, despite Moscow simply revealing its shoddy hand, many of its opponents have chosen to fold.

Summary and Implications

Without a counterbalance to its authoritarian activities in the nuclear realm, Russia has been able to manage its nuclear affairs however it pleases, with the environment, global security, and the Russian people bearing the consequences. Evidence of the unchecked authoritarian practices can quickly be found in the lack of any decommissioning infrastructure at the end of the Cold War, the unbound capacity of the Soviet military, the suppression of any dissenting opinion within the state, and bold manipulation of international colleagues despite casting a blind eye at security concerns.

While the argument could be made that most of these issues could come down to corrupt individuals that used a broken system to their advantage, really this just gets into a question of causality: whether authoritarian environments breed and encourage corrupt individuals, or vice versa – a question beyond the scope of this analysis. Another argument posed may be one based purely in economics: perhaps the Soviet Union in all honestly simply didn't have the funds to keep its nuclear infrastructure running safely and smoothly. This is a fair point, especially nearing the 1990s as the USSR began to collapse, but is no excuse now. Russia recently developed, or at least claims to have developed, a hypersonic missile. If the Russian Federation is willing to dip back into a nuclear arms race, it's not a giant leap to say that it likely has the funding for nuclear cleanup and security at this point. These funds simply seem to be directed towards other, more offensively-focused programs. Also, an economic explanation doesn't account for the suppression of public opinion. But, returning to the consequences, there are implications for the rest of the world beyond environmental damage and the security of Russian storage – other nuclear states may fall into the same pattern of impunity.

One state that falls into a danger zone to this effect is Pakistan. In a mostly cold – but occasionally hot – standoff with its neighbor India, Pakistan is strongly motivated to preserve and expand its nuclear capabilities for its defense. This defensive posture is even more precarious if one maintains that Pakistan employs a policy of asymmetric escalation – willing to use nuclear weapons against any form of attack, especially when facing India's more powerful conventional forces.[21] So, a nuclear base exists from which to fall. As far as domestic politics, the Pakistani government fluctuates between, at best, a weak representative government and, at worst, authoritarian regimes. Concentrated control over the nuclear establishment is therefore a realistic possibility, especially when the military's high degree of control over the political bureaucracy is taken into account. While these factors bear a high degree of similarity to the hallmarks of the authoritarian Soviet system, the same problems haven't yet manifested – as far as the rest of the world is aware at least – but the basis for nuclear mismanagement is arguably already in place.

When power is concentrated in the hands of a select number of people while the majority is silenced, it becomes very easy to gloss over the lives of those who can't be heard. While stones of blame can be cast at the authoritarian regime of the USSR for its mismanagement of its nuclear arsenal, this written penance does nothing for the Soviet people and modern Russian citizens who have shouldered all of the consequences like a beleaguered, frozen Atlas. They may not have been the directors of the apocalypse, but perhaps they should have been.

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Notes

[1] Alexievich, 2005

[2] Alexievich, 2005

[3] Handler, 1993

[4] Holloway, 1996

[5] Gouré, 1987

[6] Holloway, 1996

[7] Handler, 1993

[8] Handler, 1993

[9] Ibid.

[10] Dawson, 2005

[11] Khalturin, 2009

[12] Khalturin, 2009

[13] Dawson, 2005

[14] Ibid.

[15] Backgrounder on the Three Mile Island Accident, 2018

[16] Alexievich, 2005

[17] Dawson, 2005

[18] Ibid.

[19] Dawson, 2005

[20] Ibid.

[21] Narang, 2009

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