

Chernobyl, A Nuclear Catastrophe:
Communication in History

Irena Marsalek
Senior Division
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Process Paper

I chose my topic after a period of contemplation in which I watched HBO's documentary about the events of Chernobyl. From then on, I had been interested in the history of Chernobyl itself, as it was not only something that not many people had known about but it had also affected my parents as children. I was very enamored by the cultural phenomenon surrounding this explosion, mainly due to the dangerous environment that the Russians were in without realizing during the time. Furthermore, Chernobyl also had themes of miscommunication, communism, and secrecy that I believed would fit perfectly with this year's theme.

I began my research with gathering as much information about the events and effects of Chernobyl so that I could fully understand the scope of its magnitude. After this, I specifically moved onto primary sources pertaining to the confidentiality of Chernobyl-related details so that I could support my historical argument as best as possible. Following this, I then widened my search and decided to gather sources revolving around foreign opinion on Russia following Chernobyl in order to see how their lack of disclosure appeared in the eyes of those around them. I then organized these ideas into a compartmentalized historical case.

I created my project by first deciding that I wanted to do an essay. I tend to work better on long-term projects when I have control over time management and scheduling, and so an essay was best. Additionally, I enjoy writing in any form, and found that depicting Chernobyl in an enlightening portrayal through literature would be enjoyable. To begin, I divided each portion of my essay into sections and then formed a draft, portion by portion. Next, I began to decide what sources would go where, in order to have my essay planned as precisely as possible. From then on, I simply wrote and edited my paper until it was satisfactory.

My historical argument is that Chernobyl allowed for people across the world to have a deeper look into what aspects of a country permit it to function in dire situations that require unification. Through the mistakes that were made in the explosion, both scientifically and governmentally, it becomes clear that communication is extremely important to society's successes during struggles such as Chernobyl. The mistakes made on behalf of Russia laid a

foundation of precedence in which the government should be held accountable for the information they provide to citizens affected by disasters.

My topic is significant in history because it establishes how consequential poor management and maintenance of dangerous nuclear plants can be on entire countries or even continents, considering that Chernobyl is considered the worst nuclear disaster to date. It's impact was very far-reaching, and as a result of this, there had to be a major change in the infrastructure of reactor cores in order for safety to be ensured from then on. Overall, Chernobyl influenced the regulatory systems in other countries and also reinforced the importance of nuclear superintendence.

“The truth doesn’t care about our needs or wants. It doesn’t care about our governments, our ideologies, our religions. It will lie in wait, for all time.”¹

On April 26th, 1986, almost 50,000 citizens in the city of Pripyat, Russia, watched as the Chernobyl Nuclear Power Plant exploded only two miles away from their homes.² This explosion occurred on behalf of a blatantly power-hungry hierarchy within Russia where reward outweighed risk time and time again. Many were hungry for more wealth and success, and so safety regularity as well as personnel training within nuclear power plants were completely disregarded in their selfish searches for power and more efficient nuclear energy emission. Directly after these disturbing events, Pripyat was evacuated, and a commission was made in order to investigate the events of Chernobyl so that they could conclude who was responsible for Chernobyl’s explosion.

Valery Legasov, a Soviet inorganic chemist, was a prime member of this commission. His experiences while dealing with Chernobyl allowed for him to have a closer look at what really caused the disaster in a manner that no other person was able to. Not only did he uncover the lack of safety measures, but he also realized how much of the actual disaster was not being communicated to both the citizens of Russia and foreign powers. These discoveries inspired him to embark on a scientific journey in which he unveiled the complete and utter secrecy between the Soviet Union and the rest of the world. Legasov’s bravery in the face of mystery and a bureaucratic system that perpetuated a never-ending cycle of lies bridged the gap in understanding how significant the supervision of nuclear power plants were, changed Russia’s

¹ Craig Mazin, Chernobyl, “Vichnaya Pamyat”. (HBO Max, released June 3rd 2019)

² “Pripyat”, Wikipedia, n.p., last edited February 1st 2020. <https://en.wikipedia.org/wiki/Pripyat>

scientific outlook, and paved the way for his country to no longer operate under a Communist system where the country's citizens were not truly unified under their government.

Chernobyl's Beginnings

The explosion that occurred was a calamity that was bound to happen from the very beginning, all the way to when Chernobyl was built. Issues such as inadequate waterproofing, structural pillars being built incorrectly, and poor thermal insulation had continually made themselves known throughout the entirety of the construction of Chernobyl; however one of the most significant design errors, in which improper maintenance of reactivity could have easily led to a positive void coefficient, was completely ignored. To explain, Chernobyl operates with an RBMK reactor, and the core of this specific reactor primarily relies on water in order to maintain power and cool down the core. A positive void coefficient can occur when the content of steam (which is created when the temperature within the core is too high) becomes too great and causes reactivity to spike, essentially creating a chain reaction.³ This design error eventually became the direct cause for Chernobyl's explosion later on.

Not knowing about this crucial flaw, personnel at the No. 4 Reactor had decided to run a reactor systems test on the fateful night of April 26th, 1986.⁴ During this test, the power of the core steadily decreased as planned but then became very high without any apparent reason. Because the deputy-chief engineer of the No. 4 Reactor, Anatoly Dyatlov, decided to disable automatic shutdown mechanisms on behalf of keeping power as low as humanly possible without interference, they had no way of stopping the abrupt surge in power.

³ "RBMK Reactors -- Appendix to Nuclear Power Reactors", World Nuclear Association, n.d., last updated December 20th 2020.

<https://www.world-nuclear.org/information-library/nuclear-fuel-cycle/nuclear-power-reactors/appendices/rbm-reactors.aspx>

⁴ "Backgrounder on Chernobyl Power Plant Accident", United States Nuclear Regulatory Commission, August 15th, 2018. <https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/chernobyl-bg.html>

In an attempt to fix his mistake fueled by desperation, Dyatlov ordered the staff to insert control rods which slowed down nuclear chain reactions within the reactor core. Due to the tips of the control rods temporarily increasing temperature, the water inside of the core reactor then turned into steam, thus enabling a positive void coefficient.

The explosion of Chernobyl is commonly regarded as the “worst nuclear disaster”⁵ in all of history, reinforcing the earth-shattering impact that the tragedy had. This is also apparent in its multifaceted catastrophic nature. Two power plant workers died on impact, and twenty eight more passed away as a result of the radiation emitted by the graphite that was exposed during the explosion. Thirty four firefighters were then summoned to Chernobyl to put out the fire without any warning as to the radiation exposure they would receive.

Citizens of Pripyat were exposed to high levels of radiation and were evacuated afterwards. On-site workers at Chernobyl, however, were exposed to much drastically higher levels of radiation; these specific people died after a month or so typically due to acute radiation syndrome.⁶ Said workers included nuclear power plant employees and firefighters.

From then on, the Soviet Union scrambled to gather all notable scientists for an emergency meeting in which immediate action occurred. Valery Legasov describes the creation of the commission as being very sudden, stating, “Aleksandr Grigorjevich Meshkov quickly stated that a Government commission has been formed to investigate the Chernobyl accident, and that I have been assigned to that commission. I was told that the members of the commission should gather at Vnukovo airport at 1600 hours. I left the meeting immediately.”⁷ The

⁵ Marc Lallanilla, “Chernobyl: Facts About the Disaster.” Live Science, June 20th 2019.
<https://www.livescience.com/39961-chernobyl.html>

⁶ “The Chernobyl Gallery”, n.p., n.d. <http://www.chernobylgallery.com/chernobyl-disaster/radiation-levels/>

⁷ Valery Legasov, “Tape 1 Side A”, Yury Timofeyev (translator), August 16th, 2019.
<https://legasovtapetranslation.blogspot.com/2019/08/tape-1-side-a.html>

commission was created incredibly quickly, with the purpose being to both minimize the effects of the explosion and figure out the cause.

Legasov was an incredibly significant part of how Chernobyl's mistakes were revealed, as he was the director of the general operation regarding the disposal of life-threatening graphite.⁸ He strode with no hesitation into the radiation of Chernobyl despite knowing its effects, as an intense fascination and curiosity overtook him. His discoveries lead to ground-breaking shifts in both the political and scientific world.

The Search for Truth Amongst Deceit

As soon as Legasov had been thrown into the midst of the disaster, he was immediately faced with countless problems. One of the more notable problems was a cluster of bubbler tanks located directly beneath the core. To go into more detail, these bubbler tanks were filled with water, and if the molten core of the reactor came into contact with the water from above, an explosion of detrimental magnitude would occur once again. Three citizens volunteered to drain the tanks from within the basement, thus saving Russia from yet another continental disaster and solving Legasov's predicament.

Furthermore, Legasov was closely involved with operations relating to sending helicopters with boron and sand in order to quell the fire as well as the deployment of coal miners beneath the core so that they could inject liquid nitrogen into the earth for the sake of decreasing chances of there being another nuclear disaster by cooling the nuclear fuel within the earth.⁹ These were considered only a few specific instances among many where Legasov's logical expertise steered his country towards stability.

⁸ Valery Legasov, "Tape 1 Side A", Yury Timofeyev (translator), August 16th 2019.
<https://legasovtapetranslation.blogspot.com/2019/08/tape-1-side-a.html>

⁹ Donna Slater, "The hardly recognised coal miners who limited impact of Soviet nuclear disaster", Mining Weekly, December 9th 2016.
<https://www.miningweekly.com/article/historic-chernobyl-nuclear-disaster-saw-initial-assistance-provided-by-coal-miners-2016-12-09>

One of the ongoing issues throughout the entirety of the investigation into Chernobyl was the manner in which the radiation geologically, physically, and environmentally affected its surrounding area. Countless dead animals and waste had to be removed by workers, as they were contaminated with radiation, and a portion of surrounding cities in Ukraine became uninhabitable for a long time. In addition, The 4-mile vicinity around Chernobyl was deemed the 'Red Forest' due to all plant life dying as a result of severe radiation.¹⁰

Among those that suffered the effects of the radiation were citizens, above all. It is said that the firemen at Chernobyl were exposed to the equivalent to 5,600 years of radiation.¹¹ Coal miners, waste removal employees, and the three bubbler tank volunteers can be considered further examples of these impacts since they were all exposed to radiation in addition. These individuals were all hired with minimal knowledge about how they would be impacted by the events of Chernobyl in their work.

As Legasov navigated through the challenges that came with the nuclear explosion of Chernobyl, the truths as to the reasoning behind the disaster began to become very apparent. The inexperience of the nuclear employees as well as the control rods being made of graphite spurred Legasov towards the intent of compiling evidence against the Soviet Union on account of their scientific ineptitude and lack of communication with citizens along with workers on the radiation present.

In order to properly compile solid evidence against Russia, Legasov had to make sure that his experience while trying to control the effects of the disaster was properly documented in

¹⁰ Erin Blakemore, "The Chernobyl disaster: What happened, and the long-term impacts", National Geographic, May 17th, 2019.

<https://www.nationalgeographic.com/culture/topics/reference/chernobyl-disaster/#close>

¹¹ Akshay Pai, "First firemen at Chernobyl site were exposed to 5,600 years-worth of radiation in 48 seconds.", February 26th 2020.

<https://meaww.com/firemen-chernobyl-nuclear-disaster-expose-fatal-levels-radiation-48-seconds-anatoli-z-akharov>

a manner for all to hear, and so he began to create recordings all the while working for the Government Commission. These recordings were vital to the truth about Chernobyl being spread after his death, but more importantly, the encounters he had while trying to maintain the safety of Russia became incredibly significant when he gave his report on the nuclear disaster to the International Atomic Energy Agency. His honest portrayal of the events that occurred and the reasoning behind such a catastrophic disaster shifted the entire nation's foundational axis upon which unification lied.

The Aftermath of Chernobyl

Legasov's report to the I.A.E.A. is commonly described as a testament to the truth that "calmed down the international community, but angered colleagues at home"¹², due to his display of honesty despite Russia's reputation being tarnished. Victor Brukhanov, plant director, was all sentenced to 10 years in a labor camp together with chief engineer, Nikolai Fomin, and his deputy Anatoly Dyatlov.¹³ These individuals failed to recognize their duties of maintaining safety within the nuclear power plant for the sake of the employees.

After the report to the I.A.E.A. regarding radiation in the vicinity of Chernobyl, Pripjat was left uninhabited after its citizens were relocated to safer areas. It is still empty to this day and stands on its lonesome as a ghost town, reminiscent of the Soviet Union's failure in maintaining a unified nation because of its lack of preparation for nuclear disasters. Their mistake lingers as an infinite reminder of their lies.

One of the most prominent effects as to the Soviet Union misinforming citizens of Pripjat and other neighboring provinces of the radiation surrounding Chernobyl was the drastic

¹² Helga, "What is the cost of lies: Valery Legasov - Chernobyl Hero?" January 1st, 2020. <https://www.chernobylwel.com/blog-detail/140/what-is-the-cost-of-lies-valery-legasov-chernobyl-hero>

¹³ Thom Shanker, "Chernobyl Officials Sentenced to Labor Camps". Chicago Tribune, July 30th 1987. <https://www.chicagotribune.com/news/ct-xpm-1987-07-30-8702250766-story.html>

jump in various types of cancers. The true number of overall radiation-related deaths are unknown, primarily because Russia doesn't count the increase in cancers within their country as being correlated to Chernobyl, but it can be estimated that there were at least 700 cases of thyroid cancer in children as a result.¹⁴ The dishonesty of Russia in this aspect was highlighted in various foreign newspapers, political cartoons, and publications. This tarnishes Russia's reputation as a consequence.

Years pass after the report and clean-up of Chernobyl, and on the second anniversary of the nuclear power plant explosion, Valery Legasov is found dead after committing suicide. Soon after his death, the recordings he had made were released into the world. These tapes were incredibly hypocritical towards how bad the entire government and scientific systems were under the Soviet Union's rule. He also discusses many things never revealed before such as how employees were unaware of the infrastructural mishaps that occurred while building the power plant as well as the general misinformation about radiation. The world is shocked by what is unveiled, being completely unaware of the full truth.

As a consequence of Legasov's recordings and the general culmination of information being released in terms of the causes of the disaster, namely Russia's gross misconduct in several aspects, foreign countries' perspectives began to shift. Nuclear safety began to be taken more seriously, with countries such as France criticizing Russia for their scientific technology and even stating that Chernobyl was indicative of the "inconsistency of the technology used in the USSR and, in particular, the organization of the use of atomic energy stations, where attention is not being paid to the human factor."¹⁵

¹⁴ "Effects of the Chernobyl disaster", Wikipedia, n.p., last edited on January 20th 2021.
https://en.wikipedia.org/wiki/Effects_of_the_Chernobyl_disaster

¹⁵ "Intelligence Message on the Chernobyl Accident", n.p., Wilson Digital Archive, February 3rd 1987.
<https://digitalarchive.wilsoncenter.org/document/134311>

A New Perspective

As Russia and the rest of the world began to finally steer themselves back onto a path resembling normalcy once more, the events of Chernobyl still left an ineffectual impression in its wake. The legitimacy of the Soviet Union's power and overall organization skills surrounding their citizens, and more specifically, their scientific endeavors were doubted severely thereafter.

Chernobyl was also often used in anti-nuclear propaganda that berated Russia for their ineffective handling when in unfavorable circumstances as well as the general usage of nuclear sciences, essentially forcing the Soviet Union to fix their mistakes as soon as possible. It can be concluded that Chernobyl is one of the more significant events in Russia's history that can be referenced as a contribution to the eventual downfall of the Soviet Union. The nuclear disaster has been stated as being the "product of a broken and distorted system that could no longer continue",¹⁶ exemplifying the Soviet Union's errors in forming strong connections with their citizens through disclosure.

Legasov's endless determination and undeterred resolve was crucial in his pursuit for the truth, despite the problems faced along the way and the inevitable health risks that he would be facing. His efforts inspired a new era of scientists to arise, individuals with an insatiable desire for scientific discovery and righteousness through mishaps or disasters. He also inspired a new path for Russia and other nations moving forward in terms of how they deal with their mistakes. Nuclear safety became much more regulated and was taken much more seriously as a result.

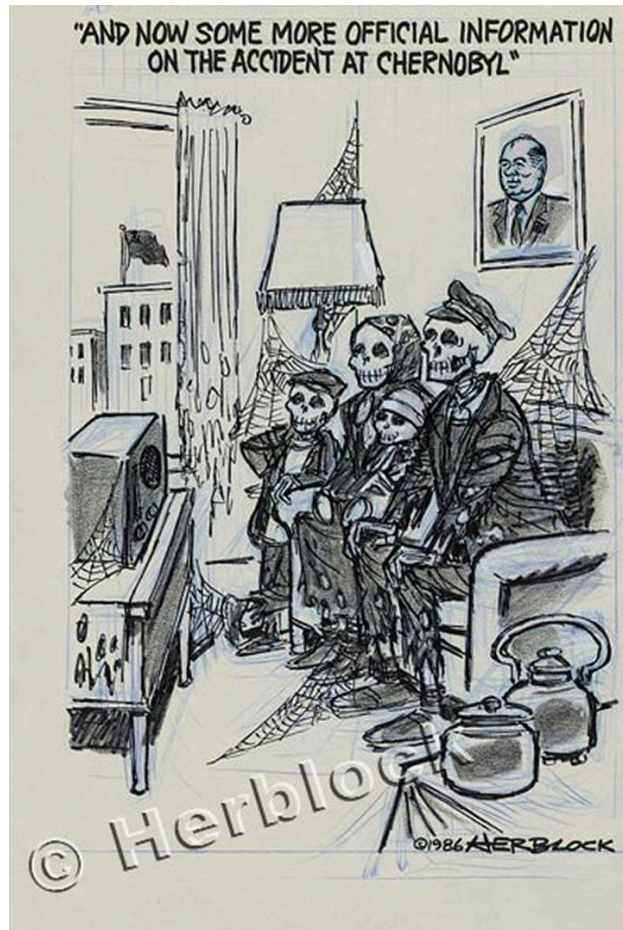
Communication and proper handling of the citizens exposed to the effects of the disaster, specifically radiation, was one of the key takeaways in which Russia's response was incredibly poorly executed. The Soviet Union continually withheld vital information about how individuals

¹⁶ James Bloodworth, "Did Chernobyl kill communism?" UnHerd, June 11th 2019.
<https://unherd.com/2019/06/chernobyl-and-the-meltdown-of-the-ussr/>

were going to be affected health-wise as a result of them being exposed to the radiation, and even worse, the actual extent of radiation in the vicinity was not properly disclosed to citizens either. Legasov helped revolutionize the set safety standards for nuclear power plants in the event that disasters occur and encouraged a more honest, vocal government in Russia where no one was left in the dark anymore.

To conclude, the long-term disregard for proper safety regulation as well as a poorly trained staff and other design errors were the main factors that led to Chernobyl's downfall, causing an explosion of world-altering magnitude. Thousands of citizens within Russia were affected by the radiation that came from the graphite exposure, and as the Soviet Union scrambled to fix their mistakes, they refused to inform the people of both their errors and the health risks they now had to live with afterwards. Fortunately, Valery Legasov stepped up and made an incredible impact on modern society in terms of governmental and scientific endurance. By revealing these issues within the system, he ensured that the truth would be known, and also epitomized the fact that nothing ever comes to one without struggle or risk. Legasov ensured that communication was the key to understanding with his efforts.

Appendix A:



Block, Herb. "And now, some more official information on the accident at Chernobyl." Washington Post. Political Cartoon. May 6th, 1986.

After Chernobyl exploded, leaving a fire and life-threatening radiation in its midst, the citizens that lived in Pripyat were not informed nor were they even properly evacuated until more than twenty four hours after the disaster - on April 27th. The political cartoon above illustrates that because the citizens were not properly taken care of after the disaster, they would most likely not even be alive to comprehend how or why the Chernobyl disaster occurred.

Annotated Bibliography

Primary:

Andropov, Yuri. "Construction Flaws at the Chernobyl Nuclear Power Plant." Library of Congress. February 21, 1979. <https://www.loc.gov/exhibits/archives/n2constr.html>

I chose this document due to how it outlined the faults of the RBMK reactor. This article was helpful as it helped me understand that the reactor had a faulty design as a result of inadequately prepared and trained personnel.

Block, Herb. "And now some more official information on the accident at Chernobyl." May 6, 1986. Political cartoon. Library of Congress. <https://www.loc.gov/exhibits/herblock-enduring-outrage/environment.html>

I chose this political cartoon because it very nicely encompassed the lack of communication between the Soviet Union and the citizens of Russia. This political cartoon was helpful as it directly correlated to the theme and the topic of secrecy in regards to public safety.

No author. "Chernobyl Nuclear Accident, 1986." Wilson Center Digital Archive. <https://digitalarchive.wilsoncenter.org/collection/610/chernobyl-nuclear-accident-1986>

I chose this collection of primary sources because it gave context and incredibly insightful information about every aspect of Chernobyl, from the errors made while building the reactor, to the ordering of misinformation in regards to Russia's citizens. This collection was incredibly helpful as it holds over forty documents, all with resourceful information, which allowed me to have a plethora of sources.

Shanker, Thom. "Chernobyl Officials Are Sentenced to Labor Camp." Chicago Tribune. July 30, 1987. <https://www.chicagotribune.com/news/ct-xpm-1987-07-30-8702250766-story.html>

I chose this article due to how it spoke about the people that were mainly responsible for the accident. This article was helpful as it informed me of what consequences the guilty party were upheld to and also was detailed in regards to how foreign affairs were taken care of.

Legasov, Valery. "The Legasov Tapes." Tape 1, Side A. Translated August 16th, 2019. Last modified date unknown. Can be found on the link provided. <https://legasovtapetranslation.blogspot.com/2019/08/tape-1-side-a.html>

I chose these translated tapes because I considered them to be the most accurate account of Valery Legasov's time and how it was spent trying to essentially resolve the

consequences of Chernobyl since it was from his perspective. This translated tape was helpful because I used it as a quote and also found valuable information.

Secondary:

Akshay Pai. "First firemen at Chernobyl site were exposed to 5,600 years-worth of radiation in 48 seconds." Media Entertainments Arts Worldwide. Published date unknown. Last modified February 26th, 2020. Can be found on WEAWW website.

<https://meaww.com/firemen-chernobyl-nuclear-disaster-expose-fatal-levels-radiation-48-seconds-anatoli-zakharov>

Author unknown. "Backgrounder on Chernobyl Nuclear Power Plant Accident." United States Nuclear Regulatory Commission. August 2018. Last modified August 15th, 2018. Can be found on U.S.N.R.C's website.

<https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/chernobyl-bg.html>

I chose this website because it provides plentiful information on every aspect of Chernobyl. This article was helpful as it was good as a secondary reference in my paper and also discussed the Nuclear Regulatory's response to the disaster which was very educational.

Author unknown. "RBMK Reactors -- Appendix to Nuclear Power Plants." World Nuclear Association. Published date unknown. Last modified December 2020.

<https://www.world-nuclear.org/information-library/nuclear-fuel-cycle/nuclear-power-reactors/appendices/rbmk-reactors.aspx>

I chose this website because it was incredibly detailed in its multifaceted information all about the RBMK reactor and how it works as well as its flaws. This article was helpful as it explained individual features of the reactor as well as how a positive void coefficient occurs.

Author unknown. "Pripyat." Wikipedia. November 27th, 2004. Last modified November 28th, 2020. <https://en.wikipedia.org/wiki/Pripyat>

I chose this website because it had a lot of information about the city of Pripyat, Ukraine throughout the years as well as during Chernobyl. This article was helpful as I utilized it in terms of Pripyat's population and its circumstances following the explosion.

Author unknown. "The Real Story of the Chernobyl Divers." History UK. Published date unknown. Last modified date unknown.

<https://www.history.co.uk/article/the-real-story-of-the-chernobyl-divers>

I chose this article because it gave me deeper insight into the role of the Chernobyl divers that volunteered to drain the bubbler tanks. This article was helpful as I utilized it in order to get more specific information on the roles of the divers and their influence on the outcome of the disaster shortly thereafter.

Author unknown. "Effects of the Chernobyl disaster." Wikipedia. May 24th, 2006. Last modified January 20th, 2021. Can be found on Wikipedia's website.
https://en.wikipedia.org/wiki/Effects_of_the_Chernobyl_disaster#Long-term_health_effects

I chose this website because it outlines the various health issues that arose as a result of citizens that were in the vicinity of the radiation after Chernobyl exploded. This article was helpful as it was what I used to quote thyroid cancer cases in Russia and was quite specific as to how the Soviet Union handled the jump in general illnesses.

I chose this article because it emphasized how impactful the Chernobyl explosion was on specific individuals involved, more specifically firefighters. This article was helpful as I paraphrased with this specific article in order to draw upon how truly catastrophic the disaster was for almost every party involved, both significant and insignificant.

Blakemore, Eren. "The Chernobyl Disaster: What happened, and the long term impacts." National Geographic. May 17th, 2019. Page numbers unknown. Article can be found through National Geographic's website.
<https://www.nationalgeographic.com/culture/topics/reference/chernobyl-disaster/#close>

I chose this magazine because it goes over the environmental effects that Chernobyl had on the area surrounding it as well as the overall long-term impact. This article was helpful as it shines a light as to how Chernobyl continues to still impact our world and the inhabitants of Ukraine thirty years later.

Bloodworth, James. "Did Chernobyl kill communism?" UnHerd. Last modified date unknown. June 11, 2019. <https://unherd.com/2019/06/chernobyl-and-the-meltdown-of-the-ussr/>

I chose this article because it delves into Communism as a working governmental ideology and its faults in correlation to Chernobyl. This article was helpful as it gave the events of Chernobyl a sense of importance in relation to how Communism ended up crumbling and how communication could have prevented many of the events that occurred.

Corcoran, Micheal. "The Lessons of Chernobyl Are More Relevant Than Ever." Neuroleadership Institute. Last modified date unknown. July 9th, 2020.

<https://neuroleadership.com/your-brain-at-work/lessons-of-chernobyl-speaking-up/>

I chose this article because it outlined several ways in which Chernobyl could have been avoided. This article was helpful as it showed several perspectives and correlated the events themselves to how each singular mistake was a result of not communicating.

Hecla, Jake. "Minimizing the consequences of nuclear accidents through effective communication." The Bulletin. August 31, 2020. Page numbers unknown. Article can be found on the Bulletin's website.

<https://thebulletin.org/2020/08/minimizing-the-consequences-of-nuclear-accidents-through-effective-communication/>

I chose this magazine because it goes over the specific incidents in which the Soviet Union actively chose to ignore the health of individuals all over Russia and other countries. This article was helpful as it was analytical as to the effects of miscommunication in a way that showed the true fruition of the Soviet's sense of secrecy.

Helga. Full name unknown. "What is the cost of lies: Valery Legasov - Chernobyl Hero?" January 1st, 2020. Last modified date unknown. Can be found on chernobylwel.com.

<https://www.chernobylwel.com/blog-detail/140/what-is-the-cost-of-lies-valery-legasov-chernobyl-hero>

I chose this article because it spoke of the conference in Vienna which was somewhat difficult to find specific information on and also had a quote that I used in the beginning of my paper. This article was helpful as I used it in various different ways and got a lot of important facts from it.

Lalanilla, Marc. "Chernobyl: Facts About the Nuclear Disaster." Live Science. June 20th, 2019. Last modified date unknown. <https://www.livescience.com/39961-chernobyl.html>

I chose this article because it gave structured, astute facts about Chernobyl that I enjoyed and quickly learned from. This article was helpful as I used it as a quote and also spoke about Chernobyl today which was beneficial to my paper.

Paul. Full name unknown. "Radiation Levels." The Chernobyl Gallery. Published date unknown. Last modified date unknown.

<http://www.chernobylgallery.com/chernobyl-disaster/radiation-levels/>

I chose this website because it not only explained what factors affected radiation magnitude but also outlined those that were most and least affected in an organized manner. This

website was helpful as it was efficiently informative and also allowed for me to understand the different characteristics that made up radiation overall.

Slater, Donna. "The hardly recognized coal miners who limited impact of Soviet nuclear disaster." Mining Weekly. December 9th, 2016. Last modified date unknown.
<https://www.miningweekly.com/article/historic-chernobyl-nuclear-disaster-saw-initial-assistance-provided-by-coal-miners-2016-12-09>

I chose this article because it discussed the purpose of what the coal miners were being hired to do and explained how they were contributing to the success of keeping the disaster in check. This article was helpful as it gave me more insight into Valery Legasov's experiences during his time onsite.