# THE NUCLEAR AGE READER

**Edited by Jeffrey Porro**

with Paul Doty, Carl Kaysen, and Jack Ruina

To accompany the PBS series **WAR AND PEACE IN THE NUCLEAR AGE**

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An Annenberg/CPB Project

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# PREFACE

*The Nuclear Age Reader* was developed as a companion text for "War and Peace in the Nuclear Age," a prime-time television series and college-level telecourse that will air on PBS in January 1989. "The Nuclear Age" is an introduction to the forty-year history of nuclear weapons, nuclear strategy and policy, and arms control. It is the result of an unusual collaboration among the Massachusetts Institute of Technology, Harvard University, and the WGBH Educational Foundation in Boston, Massachusetts. In addition to the thirteen-hour series, the project includes a companion book for general viewers by John Newhouse, a study guide, a faculty guide, and this reader.

"The Nuclear Age" examines the origins and evolution of the nuclear competition between the United States and the Soviet Union and its impact on the world, enabling students and viewers to draw their own conclusions on the critical issues that flow from it: the nature of deterrence; the role of science and technology; decision-making, diplomacy and negotiation in the nuclear age; and the ethical debate on nuclear weapons.

*The Nuclear Age Reader* offers readers an overview of major events of the nuclear age from 1941 to the present. The selections in this anthology include excerpts from personal diaries, memoirs, letters, and speeches of key figures who have influenced nuclear policy decisions. In addition, historical accounts, newspaper articles, government documents, and critical analyses provide readers with a sense of the public mood and political policies of the times. Its aim is to provide an insight into the reasoning of the participants and to help reconstruct the dynamics that shaped their thinking—and our world.

The threat of nuclear war is one of the few issues that can truly be said to affect us all. Not surprisingly, how to deal with this threat is one of the most controversial issues faced by political leaders, religious leaders, academics, scientists, and citizens. Do we need more weapons or fewer? Should we negotiate with the Soviet Union or strive for military superiority? What are the lessons of the nuclear age?

Our purpose in putting together this anthology is to introduce students to the basic facts and controversies of the nuclear age in order to help them form their own opinions on how best to deal with the nuclear threat. The specific group we have in mind are students who have not previously studied the nuclear age extensively. Our goal, therefore, has been to provide materials that are important but not overly technical.

In compiling the readings for this anthology, one problem we were *not* faced with was a shortage of material. Since the explosion of the first atomic weapon in 1945, an extraordinary amount has been written about almost every aspect of the nuclear age. In the 1980s alone, scores of analyses, histories, memoirs, polemics, and technical reports of varying levels of complexity have been published. Our major problem was what to choose and how to organize it to make it accessible.

The chapters are arranged for the most part in chronological order. Within each individual chapter, the readings are organized into key themes. We have tried for a mixture of the "classics," secondary sources, and material that reflect the mood of the time. The classics—primary documents and speeches—show what key decision makers did and the reasoning behind their actions. We have tried to put these in perspective for students by providing introductions to each chapter and introductory paragraphs for each set of readings. In addition, the secondary sources included analyze what went on during each period. We have also tried to include some pieces that reflect the reaction of the public and the press to the major events of the nuclear age.

Finally, although most of the material here looks at the nuclear age through American eyes, we have whenever possible included Soviet views or analysis of Soviet actions. In chapters 4 and 10 we have also emphasized important views from the NATO allies.

Although this anthology contains excerpts from more than one hundred different sources and offers more than fifty suggestions for further reading, we are quite aware that this is very much an introduction. We have only scratched the surface of the important materials available. This anthology will be a success if it improves the knowledge of students about the nuclear age and encourages them to seek out more information.

*Jeffrey Porro*

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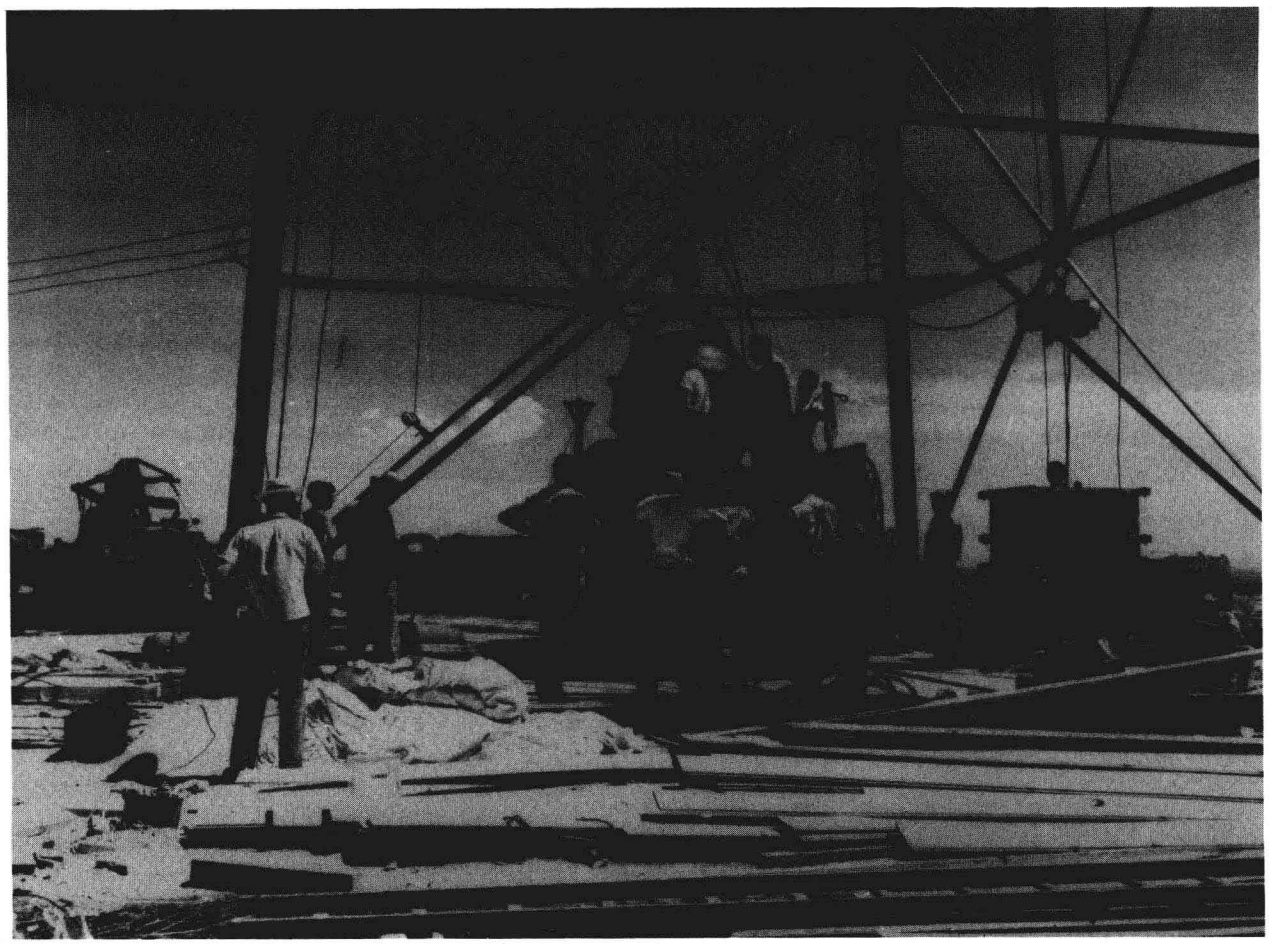
# DAWN



**TRINITY TEST SITE**

Scientists and workmen prepare to raise the world's first atomic bomb onto a 100-foot tower at the Trinity test site near Alamogordo, New Mexico. In the blast that followed the July 1945 test, the steel tower disappeared. Heat generated within the bomb's explosion reached nearly 100 million degrees (Fahrenheit), more than ten times the heat at the surface of the sun.
AP/Wide World Photos

# INTRODUCTION

The nuclear age began in July 1945 when the United States conducted the first successful test of an atomic weapon in the New Mexico desert. The world of 1945 was very different from the nuclear age as we know it now. In 1945, the United States and the Soviet Union were allies, though their relationship was beginning to worsen. Only the United States had nuclear weapons, and the number it had was very small. Scientists, military planners, and civilian leaders were very uncertain about the impact of the new atomic weapon on war and diplomacy.

After forty years of cold war between the United States and the Soviet Union, it is hard to imagine that the two superpowers were once allies. But during World War II they joined with Great Britain in a Grand Alliance against Hitler. However, it was not based on a wide range of U.S.-Soviet common interests. Indeed, between 1917 and 1941, relations between the United States and the Soviet Union had, on the whole, been characterized by hostility and suspicion. Only the common threat of Nazi Germany pushed the two states together.

In the twenty-five years before World War II, this hostility came from a number of sources. In the early years of its existence, the Soviet Union was ruled by revolutionaries actively committed to the overthrow of capitalism worldwide. It was no surprise that the world's largest capitalist country viewed Soviet intentions with suspicion. On the Soviet side, ideological hostility was further inflamed by the participation of U.S. forces in military action on behalf of anti-Bolshevik White Armies during the Russian civil war in 1919.

Relations between the United States and the Soviet Union improved somewhat during the 1930s. Under Josef Stalin, the Soviets seemed to turn inward and at times appeared willing to cooperate with capitalist countries such as the United States and Great Britain against the growing threat of Hitler's Germany. In 1933, the United States recognized the Soviet regime, and formal diplomatic relations began.

By 1940, however, U.S.-Soviet relations were again at a low point. In August 1939, the Soviet Union signed a nonaggression pact with Nazi Germany that seemed to open the way for Nazi aggression. In September 1939, Germany invaded Poland. Great Britain and France declared war on Germany, and World War II began. The Germans quickly seized most of Poland. The Soviets also invaded Poland, in accordance with their pact with the Germans, and annexed Poland's eastern territory. The Soviet deal with Germany and the Soviet invasion of Poland caused a great deal of hostility toward the Soviet Union in Britain and France, which now had to fight Germany alone, and in the United States.

This hostility was swept away on June 22, 1941, when the Germans launched a surprise attack on the Soviet Union. Hitler's move gave Great Britain and the Soviet Union a common enemy. Great Britain, all alone against the Nazis after the fall of France in 1940, quickly embraced this enemy of its enemy. The United States did the same when it entered the war in December 1941 after Pearl Harbor.

The Grand Alliance — Great Britain, the United States, and the Soviet Union — was born. But it must be kept in mind that it was not an alliance based on a large number of shared interests or values. It was based on a common enemy — Adolf Hitler. When that enemy was defeated, the Grand Alliance began to fall apart.

Fear of Hitler also helped to speed the development of the first atomic bomb. In December 1938, two German atomic scientists discovered nuclear fission — the splitting of the nucleus of an atom as a phenomenon that involved the conversion of mass into energy. When news of the discovery spread to the other countries, physicists realized that nuclear fission could lead to a chain reaction releasing immense amounts of energy, energy that could be used in a tremendously powerful bomb.

Many of the key atomic physicists working in Great Britain and the United States in the late 1930s were European émigrés who had fled Nazi persecution. They were very aware of the importance of the German scientists' breakthrough, and they were very fearful that Nazi Germany might develop an atomic bomb first. In the United States, Leo Szilard, a prominent émigré physicist, convinced Albert Einstein, the world's most famous physicist, to write a letter to President Franklin Roosevelt warning him about the possibility of a German bomb program. Roosevelt ordered that a special program be set up to explore the military implications of nuclear fission.

The U.S. atomic program proceeded slowly at first, and many of the early key breakthroughs were made by physicists working in Great Britain. But the U.S. effort picked up speed after the Japanese attack on Pearl Harbor in December 1941. In 1942 the top physicists in the United States were brought together to work on the Manhattan Project, whose purpose was to develop an atomic bomb. They worked feverishly and were finally successful when the first atomic bomb was tested in July 1945. Ironically, Nazi Germany had surrendered in April, and it was learned that the German scientists had made little progress toward an

atomic bomb. The first atomic bomb was dropped on the Japanese city of Hiroshima on August 6, 1945. Three days later another atomic bomb was dropped on Nagasaki.

Because it was a weapons development program, the Manhattan Project was placed under the control of the military and headed by an Army general, Leslie Groves of the Corps of Engineers. The key scientists were civilians. Although all involved in the Manhattan Project were united in their dedication to building an atomic bomb, some of the scientists had worries not shared by the military or higher civilian authorities.

One prominent physicist, Niels Bohr, worried about the decision of the United States and Great Britain to share atomic information with each other but to deny it to the Soviet Union. Bohr believed that this would deepen Soviet hostility and make postwar cooperation difficult. As work on the atomic bomb progressed and it became clear that the atomic bomb would be used against Japan, some of the key Manhattan Project scientists urged the government to consider staging a demonstration of the bomb for the Japanese before attacking them. But they were overruled.

The scientists' argument in favor of a demonstration for the Japanese of the power of the atomic bomb became part of the controversy over the dropping of the bomb on Japan. In the years since Hiroshima, many historians and policy analysts have agreed with the Truman administration's argument that the atomic attacks on Japan were needed to avoid an invasion that would have cost hundreds of thousands of American lives. Others have argued that the Japanese were preparing to surrender in any case, or that a demonstration of the bomb at a remote island, as the scientists had advocated, would have been sufficient.

The Japanese surrendered five days after the bombing of Nagasaki. With Germany and Japan defeated, the old antagonisms between the United States and the Soviet Union came to the fore again. But they were made much worse by a new problem: the emerging superpowers had very different plans for what the post–World War II world should look like. In particular, Soviet leader Josef Stalin believed that to safeguard Soviet national security, Communist regimes should be imposed in the countries on his borders in Eastern Europe. The Soviets also seemed interested in extending their influence in the Far East. To the United States, Soviet plans for Eastern Europe and elsewhere were unacceptable. As the Soviets pressed forward with their plans in 1945 and 1946, the United States gradually came to believe that the expansion of Soviet power had to be stopped. U.S.-Soviet relations deteriorated badly.

Although the United States had a monopoly on nuclear weapons, it was very unclear exactly how the nation would use this monopoly. There is some evidence that Harry Truman, who became president after Roosevelt died in April 1945, tried to use the threat of the atomic bomb to pressure the Soviets to change their policy in Eastern Europe and in Asia. He was not very successful.

Some of the scientists who had worked on the bomb believed that atomic weapons were so terrible that they should never again be used as weapons of war. These scientists and other Americans urged that all atomic weapons be placed under international control. In 1946, the United States made a proposal, the Baruch Plan, to place atomic weapons under the control of the newly formed United Nations. Some of the features of the plan were unacceptable to the Soviet Union, and it was never realized. In the meantime, the Soviets were proceeding with their own program to develop atomic weapons.

In sum, by 1946 it was clear that the postwar world of the nuclear age would be very different from the prewar one. Atomic weapons were a reality, and U.S.-Soviet relations had begun to unravel. But it remained very uncertain what the new world would look like and what role the United States would play in it. Some key U.S. leaders feared that the United States might retreat into isolationism as it had after World War I. U.S. military might was already evaporating as the huge U.S. armies were demobilized and the boys were sent home. It was also very uncertain exactly how atomic weapons would affect war and power.

# THE NATURE OF THE GRAND ALLIANCE

## The United States Should Support the Soviet Union

### *Document 1*

**Shortly after the Nazi invasion of the Soviet Union, Joseph Davies, the U.S. ambassador to Moscow, urged Washington to support the Soviet war effort. In these excerpts from his diaries, Davies lays out the case for "vigorous and prompt" U.S. military aid, noting that aid to Moscow helps protect U.S. security. Davies also discusses Stalin's mistrust of the West.**

### 1 JOSEPH DAVIES DIARY July 7, 1941

*Washington—July 7, 1941*

Had lunch with Sumner Welles today who is Acting Secretary in the absence of Secretary Hull. Wanted to discuss the Russian situation with him. Churchill has just announced that Britain will give "all-out" aid to Russia as allies, regardless of any conflicting ideologies and without thought of future postwar matters. I urged that the United States do likewise vigorously and promptly for two reasons: first, despite wealth and military strength, which I believe Russia had, my reports from Russia would indicate, it was nevertheless doubtful whether Russia's second line of defense — war mechanized industrial production — could in the long run stand up against German industrial war industry, and that Russia ultimately would have to have war supplies from here; second, that the Soviet leaders and the Russian people were proud and exceedingly sensitive. France and Britain had made the great mistake of flouting them in 1938 and 1939 with almost disastrous effect when they threw the Soviets into Hitler's camp. This Hitler attack, in my opinion, was a God-given break in the situation for nonaggressor nations and Soviet resistance should be stimulated in every way possible. In the event of partial success in the Ukraine, Hitler would undoubtedly make overtures of peace to them on the basis of the *status quo*. A situation where Soviet leaders might think that they had just been used to serve our purposes and to pull our chestnuts out of the fire should not be permitted to arise. Human nature was human nature. My own opinion was that the Soviet leaders were as realistic and hardheaded as any statesmen in Europe and would be disposed to reject any peace proposal of that kind because they know Hitler's promises are no good. They are not the kind who would sit on a red-hot stove the second time. Nevertheless, we should not be niggardly in our acceptance of their aid, for they were fighting Hitlerism.

Welles has a mind like a Swiss watch. He is a thoroughgoing individualist, a democrat, and naturally hostile to Communism, but he is heart and head in this fight to save this country from the menace of Nazi victory. He said that he felt that there was much force in my point of view and asked whether I had seen the statement which he had already issued — somewhat along the purpose of my discussion. I had not seen it. In principle, he said, we are in agreement, for the Soviets were fighting Hitler, and therefore are fighting to protect our security here in the United States, both in the religious world as well as in the political sphere.

## U.S.-Soviet Friendship

### *Documents 2 and 3*

**Documents 2 and 3 indicate how the U.S.-Soviet alliance against Hitler also led the American public and some U.S. officials to feel quite friendly toward the Soviet Union during World War II. Document 2, from *Life Magazine*, is typical of many stories that appeared in the press. It depicts the whole struggle of the Soviet allies. In document 3, Vice President Henry A. Wallace describes the friendship and mutual admiration between the peoples of both nations.**

### 2 AMERICANS SEND FOOD AND WATCHES TO HELP THEIR SOVIET ALLIES March 1943

Americans are bending over backwards to give needed items to their fighting Russian allies. To meet Russia's food shortage the U.S. has been shipping more and more foodstuffs to the U.S.S.R. In 1943 these shipments increased so fast that the U.S. may send more food to Russia than to hungry England this year. Like the specially requested pork product, "tushonka," shown on this page, much of the foods for Russia have been high-energy foods containing meat and animal fats. But the U.S. is also sending them dehydrated foods, many thousand tons of wheat, flour, sugar, beans, peas, rice, cereals and vegetable oil.

In addition to the vast quantities of goods obtained through lend-lease, the American people are chipping in with contributions of their own. It is about this voluntary aid that Ambassador Standley specifically charged the Russian Government with not informing the Russian people. Russian War Relief, Inc. has raised more than $9,000,000 for the Soviets since September 1941. This organization sends medical supplies, seeds to replant the scorched earth, and collects U.S. old clothing at the rate

of 45,000 lb. per week. Russians get no new clothes by lend-lease except shoes. The 3,000,000 pairs of soldiers' boots convoyed to the U.S.S.R. last year had much to do with their preparedness for this winter's offensive.

Best recent example of the willingness of U.S. civilians to aid their allies with gifts is the "Watches for Russia" campaign in Seattle, Wash. In a short period of time more than 1,000 timepieces were donated. When the most accurate of them have been checked and repaired they will be turned over to the U.S.S.R. for use by doctors and nurses at the front.

## 3 SPEECH DELIVERED BEFORE THE CONGRESS OF AMERICAN SOVIET FRIENDSHIP
### Vice President Henry A. Wallace
### November 1942

It is no accident that Americans and Russians like each other when they get acquainted. Both peoples were molded by the vast sweep of a rich continent. Both peoples know that their future is greater than their past. Both hate sham. When the Russian people burst the shackles of Czarist absolutism, they turned instinctively to the United States for engineering and agricultural guidance. Thanks to the hunger of the Russian people for progress, they were able to learn in twenty-five years that which had taken us in the United States 100 years to develop.

The first person to sense the eventual significance of Russians and the Americans. . . . Their starting point is queville, who 107 years ago wrote:

"There are at the present time two great nations in the world which seem to tend towards the same end, although they start from different points. I allude to the Russians and the Americans. . . . Their starting point is different and their courses are not the same, yet each of them seems to be marked by the will of heaven to sway the destinies of half the globe."

Russia and the United States today are far closer than Tocqueville could possibly have imagined when he traveled across the United States in 1835. The continental position of both countries and the need for developing rich resources unmolested from without have caused the peoples of both nations to have a profound hatred of war and a strong love of peace. . . .

Russia and the United States have had a profound effect upon each other. Both are striving for the education, the productivity and the enduring happiness of the common man. The new democracy, the democracy of the common man, includes not only the Bill of Rights, but also economic democracy, ethnic democracy, educational democracy, and democracy in the treatment of the sexes.

### The Ferment of Today

The ferment in the world today is such that these various types of democracy must be woven together into a harmonious whole. Millions of Americans are now coming to see that if Pan America and the British Commonwealth are the warp of the new democracy, then the peoples of Russia and Asia may well become its woof.

Some in the United States believe that we have overemphasized what might be called political or Bill-of-Rights democracy. Carried to its extreme form, it leads to rugged individualism, exploitation, impractical emphasis on States' rights, and even to anarchy.

Russia, perceiving some of the abuses of excessive political democracy, has placed strong emphasis on economic democracy. This, carried to an extreme, demands that all power be centered in one man and his bureaucratic helpers.

Somewhere there is a practical balance between economic and political democracy. Russia and the United States both have been working toward this practical middle ground. In present-day Russia, for example, differences in wage income are almost but not quite as great as in the United States. The manager of a factory may be paid ten times as much as the average worker. Artists, scientists, and outstanding writers are usually paid even more than factory managers or political commissars.

The chief difference between the economic organization of Russia and that of the United States is that in Russia it is almost impossible to live on income-producing property. The Russian form of State socialism is designed not to get equality of income but to place a maximum incentive on each individual to produce his utmost.

A third kind of democracy, which I call ethnic, is in my opinion vital to the new democracy, the democracy of the common man. Ethnic democracy means merely that the different races and minority groups must be given equality of economic opportunity. President Roosevelt was guided by principles of ethnic democracy when in June of 1941 he issued an executive order prohibiting racial discrimination in the employing of workers by national defense industries.

Russia has probably gone farther than any other nation in the world in practicing ethnic democracy. From the Russians we can learn much, for unfortunately the Anglo-Saxons have had an attitude toward other races which has made them exceedingly unpopular in many parts of the world.

We have not sunk to the lunatic level of the Nazi myth of racial superiority, but we have sinned enough to cost us already the blood of tens of thousands of precious