



NUCLEAR TIPPING POINT

Teacher's Guide

BY GARY MUKAI, DIRECTOR, STANFORD PROGRAM ON INTERNATIONAL AND CROSS-CULTURAL EDUCATION (SPICE)



STANFORD PROGRAM ON INTERNATIONAL
AND CROSS-CULTURAL EDUCATION
DEVELOPING CURRICULUM MATERIALS SINCE 1976

NUCLEAR TIPPING POINT

Teacher's Guide

BY GARY MUKAI, DIRECTOR, STANFORD PROGRAM ON INTERNATIONAL AND CROSS-CULTURAL EDUCATION (SPICE)

**THE NUCLEAR
SECURITY PROJECT
AND THE NUCLEAR
THREAT INITIATIVE**
www.nti.org

Nuclear Tipping Point was produced by the Nuclear Threat Initiative (NTI), as part of the Nuclear Security Project, which was created by former U.S. Secretary of State George P. Shultz, former U.S. Secretary of Defense William J. Perry, former U.S. Secretary of State Henry A. Kissinger, and former U.S. Senator Sam Nunn. They joined together in 2007 and have helped reframe the global debate on nuclear issues, garnering significant global and domestic attention and expanding the political space for addressing global nuclear dangers and advancing understanding of the steps needed to reduce them. NTI works with Stanford University's Hoover Institution to coordinate the work of the principals and manage the project.

NTI is a nonprofit, nonpartisan organization with a mission to strengthen global security by reducing the risk of use and preventing the spread of nuclear, biological, and chemical weapons, and to work to build the trust, transparency, and security that are preconditions to the ultimate fulfillment of the Non-Proliferation Treaty's goals and ambitions.

**FREEMAN SPOGLI
INSTITUTE FOR
INTERNATIONAL
STUDIES AT
STANFORD
UNIVERSITY**
fsi.stanford.edu

The Freeman Spogli Institute for International Studies (FSI) is Stanford University's primary center for innovative research on major international issues and challenges. FSI builds on Stanford's impressive intellectual strengths and rigorous academic standards through interdisciplinary research conducted by its university-wide faculty, researchers, and visiting scholars.

Scholars at FSI's research centers conduct research and education on such issues as nuclear proliferation, chemical and bioterrorism, democracy and the rule of law, conflict prevention and peacekeeping, international health policy and infectious diseases, and the political economy and regional dynamics of Asia. This work is conducted in collaboration with Stanford's schools of business, earth sciences, education, engineering, humanities and sciences, law, and medicine.

The Stanford Program on International and Cross-Cultural Education (SPICE) is a program of FSI. SPICE serves as a bridge between FSI and K–14 schools. See SPICE resources at spice.stanford.edu.

spice.stanford.edu

ACKNOWLEDGMENTS

This teacher's guide would not have been possible without the support of the following individuals and organizations.

George P. Shultz, former U.S. Secretary of State

William J. Perry, former U.S. Secretary of Defense

Henry A. Kissinger, former U.S. Secretary of State

Sam Nunn, former U.S. Senator and Chairman of the Senate Armed Services Committee

Professor Coit "Chip" Blacker, Director, Freeman Spogli Institute for International Studies (FSI), served as the primary advisor of this teacher's guide.

Professor David Holloway, Stanford University, and Dr. Gloria Duffy, President and CEO, Commonwealth Club, San Francisco, and FSI Advisory Board member, encouraged me to develop this teacher's guide.

Carmen MacDougall represented the Nuclear Threat Initiative on this collaboration with the Stanford Program on International and Cross-Cultural Education.

Deborah C. Gordon, Associate Director for the Preventive Defense Project at Stanford University, co-directed by former Secretary of Defense, William J. Perry, and Professor Siegfried Hecker, Stanford University, served as the liaison between the Preventive Defense Project and SPICE.

Professor Elfrieda Hiebert, University of California, Berkeley, is the founder of TextProject (www.textproject.org). Professor Hiebert inspired me to focus the teacher's guide for *Nuclear Tipping Point* on the importance of teaching for critical literacy. Her suggestions were invaluable.

Professor Stephen Krasner, Deputy Director; Belinda Byrne, Senior Associate Director for Administration; Dr. Judith Paulus, Associate Director for Media and International Affairs; and Neil Penick, Associate Director for Development and External Relations, Freeman Spogli Institute for International Studies, Stanford University, supported SPICE throughout the development of this teacher's guide.

Linda Wells, Supervisor of Business Analysis and Information Technology, San Francisco Unified School District, thoroughly reviewed the teacher's guide and provided specific recommendations. She had excellent suggestions on how to underscore the importance of critical literacy through suggested activities and also recommended that media literacy be highlighted in the teacher's guide as well.

The SPICE staff (Waka Brown, Jonas Edman, Gregory Francis, Naomi Funahashi, Joon Seok Hong, HyoJung Jang, Se-Woong Koo, Selena Lai, Stefanie Lamb, Dr. Rennie Moon, Rylan Sekiguchi, Anh Tan, and Johanna Wee) also provided reviews of the teacher's guide.

This teacher's guide was made possible by the Nuclear Threat Initiative, Lola Nashashibi Grace, and FSI.

—Gary Mukai, Director, SPICE

TABLE OF CONTENTS

The Nuclear Security Project and The Nuclear Threat Initiative; Freeman Spogli Institute for International Studies	3
Acknowledgments	4
Letter to Educators	6
Critical Literacy in Social Studies	
Goal of the Teacher's Guide	7
Teaching for Critical Literacy	8
Activities in the Teacher's Guide	9
Synopsis of <i>Nuclear Tipping Point</i>	10
People in <i>Nuclear Tipping Point</i>	11
Background for Teachers	
Subjects and Grade Levels	12
Guiding Questions	12
Objectives	12
Materials	13
Film Chapters	13
Connections to National Standards for History in the Schools	14
Teacher Preparation	16
Useful Websites	17
Procedures: Days One and Two	17
Procedures: Day Three	18
Assessment	19
Optional Activities	19
Guiding Questions	20
Glossary	21
For Students	
Multiple Choice/True-False Quiz	27
Multiple Choice/True-False Quiz: Answer Sheet	29
Activity One: Using Digital Timelines	31
Activity Two: Who Has Nuclear Weapons?	32
Activity Three: Cooperation vs. Catastrophe	33
Activity Four: Quotes	34
Activity Five: Quotes from Barack Obama	36
Activity Six: A World Without Nuclear Weapons	37
Activity Seven: Nuclear Energy	38
Activity Eight: Vision	39
Activity Nine: Taking Action	40
Final Project: Film Reviews	42
Remarks by U.S. President Barack Obama, Hradcany Square, Prague, Czech Republic, April 5, 2009	43
"A World Free of Nuclear Weapons," by George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn. <i>The Wall Street Journal</i> , January 4, 2007	48
"Toward a Nuclear-Free World," by George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn. <i>The Wall Street Journal</i> , January 15, 2008	51
Steps to a Safer World, Nuclear Security Project	54
Sources	55

LETTER TO EDUCATORS

Dear Educators:

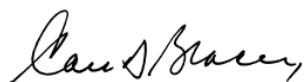
Preparing the next generation of leaders and creating more informed elementary and secondary students means improving curricula, setting higher standards, and ensuring that content is based on current research relevant to the world's critical problems and current issues. One of the world's most daunting problems is the presence of nuclear weapons in many countries of the world.

Nuclear weapons pose unequivocal threats and the call for a world free of nuclear weapons provides historic opportunities for social change and global security. Scholars at the Freeman Spogli Institute for International Studies (FSI) at Stanford University—in particular, those affiliated with the Center for International Security and Cooperation—are addressing this very issue, seeking to develop promising approaches and solutions to security-related issues that may determine mankind's common future.

I am so pleased that SPICE, an educational outreach program of FSI, has partnered with the Nuclear Threat Initiative in developing this teacher's guide for the film, *Nuclear Tipping Point*. Former U.S. Secretary of State George P. Shultz and former U.S. Secretary of Defense William J. Perry, two of the four men who were instrumental in the film's development, are affiliated with FSI. I endorse the valiant efforts and vision of these two statesmen as well as those of former U.S. Secretary of State Henry A. Kissinger and former U.S. Senator Sam Nunn.

SPICE serves as a bridge between FSI and elementary and secondary schools. The supplementary curriculum materials that SPICE produces help to make the research of FSI accessible to young students. I encourage you to stay closely involved with SPICE. FSI and SPICE are here to support your efforts in teaching your students about the world in which they live.

Sincerely,



Professor Coit "Chip" Blacker



Director, Freeman Spogli Institute for International Studies at Stanford University
Olivier Nomellini Professor in International Studies
Former Special Assistant to the President for National Security Affairs and Senior Director for Russian, Ukrainian, and Eurasian Affairs at the National Security Council (NSC), first Clinton Administration

**GOAL OF THE
TEACHER'S GUIDE**

The goal of this teacher's guide is to encourage using the film *Nuclear Tipping Point* to underscore the importance of teaching for critical literacy. In his article, "Teaching for Critical Literacy in Social Studies," Steven Wolk, Associate Professor, Teacher Education Department, Northeastern Illinois University, notes:

The purpose of critical literacy is not to tell students what to think but to empower them with multiple perspectives and questioning habits of mind and encourage them to think and take action on their decisions through inquiry, dialogue, activism, and their daily decisions about how to live so that they help make a better world (101–102).

The activities in this guide were developed after reviewing leading scholarship in the field of critical literacy in social studies. In the book, *Building Literacy in Social Studies*, Ogle, Klemp, and McBride note "when social studies is taught only in the context of past events and not related to today's issues, teachers fight an uphill battle for students' attention" (5). *Nuclear Tipping Point* and the activities in this guide explicitly link past events to today's issues.

Also, in their article, "Reading and Rewriting History," Wineburg and Martin have noted:

We need an approach to teaching history where the criteria for success have less to do with intoning loyalty oaths (to either side of the political aisle) than with students' ability to participate in the literate activities that our society demands. This means teaching students to be informed readers, writers, and thinkers about the past as well as the present—a goal all parties should be able to embrace. Our democracy's vitality depends on it (45–46).

Nuclear Tipping Point features perspectives from a bipartisan group of former and current government leaders. The activities in this teacher's guide engage students in a critical examination of the comments and perspectives presented in the film.

Last, in their article, "A Critical Literacy Perspective for Teaching and Learning Social Studies," Soares and Wood state there is "the need to examine social studies from a global perspective, and...the need to empower our students by teaching them to read and process social studies content with a critical eye" (487). *Nuclear Tipping Point* also presents perspectives from former Soviet President Mikhail Gorbachev and other world leaders.

**TEACHING FOR
CRITICAL LITERACY**

To help reach the goal of teaching for critical literacy, this teacher's guide provides information in three areas. First, the teacher's guide and film offer recommendations for encouraging students "to think and take action on their decisions through inquiry, dialogue, activism, and their daily decisions about how to live so that they help make a better world."

Second, as noted on pages 14–16 of this teacher's guide, *Nuclear Tipping Point* can help teachers address specific connections to the National Standards for History in the Schools. The major standards focus on the following three topics.

- The student understands why global power shifts took place and the Cold War broke out in the aftermath of World War II.
- The student understands major global trends since World War II.
- The student understands major foreign policy initiatives.

Each topic lends itself well to the teaching of critical literacy. The knowledge surrounding each topic is not neutral and teachers should encourage students to consider questions such as the following (Wolk, 103) and engage students in discussions, debate, and critical writing.

- Whose knowledge is this?
- Where did it come from?
- Whom might this knowledge (or perspective) benefit?
- What perspectives are missing?
- What voices are silenced?

Third, as noted earlier, the film explicitly links past events to today's issues. In a speech at the United Nations Security Council on September 24, 2009, President Barack Obama acknowledged the efforts of the four former government leaders who are featured in *Nuclear Tipping Point*:

We harbor no illusions about the difficulty of bringing about a world without nuclear weapons. We know there are plenty of cynics, and that there will be setbacks to prove their point. But there will also be days like today that push us forward—days that tell a different story. It is the story of a world that understands that no difference or division is worth destroying all that we have built and all that we love. It is a recognition that can bring people of different nationalities, ethnicities and ideologies together. In my own country, it has brought Democrat and Republican leaders together—leaders like George Shultz, Bill Perry, Henry Kissinger, and Sam Nunn, who are with us here today.

President Barack Obama's comments in the film and historical footage of Presidents John F. Kennedy and Ronald Reagan talking about nuclear weapons help students understand that the call for a nuclear-free world is not a recent phenomenon. Perspectives from world leaders like former Soviet President Mikhail Gorbachev add a global perspective to the film.

ACTIVITIES IN THE TEACHER'S GUIDE

The activities in the teacher's guide are relevant to critical literacy in the following six ways. The specifics of how each activity supports one or more of these are included below.

1. Empowering students with multiple and global perspectives.
2. Encouraging students to question the information and media they are seeing, hearing, and using (National Council for the Social Studies).
3. Engaging students in discussions, debate, and creative writing.
4. Encouraging students to take action on decisions through inquiry, analysis, dialogue, and/or activism.
5. Relating past events to contemporary issues.
6. Encouraging critical thinking and creativity.

The Multiple Choice/True-False Quiz (p. 27) helps to set the context for the film and encourages critical thinking. The Guiding Questions (p. 12) help to structure the viewing of the film so that students are not overwhelmed with all of the content in the film. This prepares them for discussions, debate, and creative writing. Activity One, Using Digital Timelines (p. 31), engages students in inquiry and analysis. Activity Two, Who Has Nuclear Weapons? (p. 32) and Activity Three, Cooperation vs. Catastrophe (p. 33), encourage critical thinking and creative writing. Activity Four, Quotes (pp. 34–35), encourages students to consider multiple perspectives and encourages critical thinking. Activity Five, Quotes from Barack Obama (p. 36), engages students in critical thinking and creative writing. Activity Six, A World Without Nuclear Weapons (p. 37), relates past events to contemporary issues and engages students creatively. Activity Seven, Nuclear Energy (p. 38), engages students in critical thinking and creative writing and design. Activity Eight, Vision (p. 39), encourages students to consider multiple and global perspectives and encourages critical thinking and writing. Activity Nine, Taking Action (p. 40), engages students in inquiry, analysis, dialogue, and activism.

Last, the suggested assessment activities (film reviews, writing op-ed articles, and developing questions) encourage discussion, creative writing, and critical thinking.

FINAL THOUGHTS

It is SPICE's hope that students will carefully consider the positions stated in *Nuclear Tipping Point* and "consider the best path for their generation." The lessons of *Nuclear Tipping Point* combined with students empowered with skills of critical literacy will hopefully contribute to a safer, more secure, and prosperous world.

**SYNOPSIS OF
NUCLEAR TIPPING
POINT**

NuclearTippingPoint.org

Nuclear Tipping Point is a conversation with four men intimately involved in American diplomacy and national security for many decades. Former U.S. Secretary of State George P. Shultz, former U.S. Secretary of Defense William J. Perry, former U.S. Secretary of State Henry A. Kissinger, and former U.S. Senator Sam Nunn share the personal experiences that led them to write four *Wall Street Journal* op-eds, in support of a world without nuclear weapons and the steps needed to get there. Their efforts have reframed the global debate on nuclear issues and, according to the *New York Times*, “sent waves through the global policy establishment.”

The film is introduced by General Colin Powell, narrated by actor Michael Douglas, and includes interviews with former California Governor Arnold Schwarzenegger and former Soviet President Mikhail Gorbachev. *Nuclear Tipping Point* was written and directed by Ben Goddard and produced by the Nuclear Threat Initiative (NTI) to raise awareness about nuclear threats and help build support for the urgent actions needed to reduce nuclear dangers. The film was funded by NTI, the Carnegie Corporation of New York, the John D. and Catherine T. MacArthur Foundation, Mr. and Mrs. Richard P. Anderson, Phineas Anderson, and Stephen Stranahan. NTI’s Nuclear Security Project works in cooperation with Stanford University’s Hoover Institution.

Nuclear weapons today present tremendous dangers, but also an historic opportunity. U.S. leadership will be required to take the world to the next stage—to a solid consensus for reversing reliance on nuclear weapons globally as a vital contribution to preventing their proliferation into potentially dangerous hands, and ultimately ending them as a threat to the world.

—WALL STREET JOURNAL OP-ED BY GEORGE P. SHULTZ, WILLIAM J. PERRY,
HENRY A. KISSINGER, AND SAM NUNN, JANUARY 4, 2007

**PEOPLE IN
NUCLEAR TIPPING
POINT**

The following people make statements in *Nuclear Tipping Point* (listed alphabetically):

Margaret Beckett, former Secretary of State for Foreign and Commonwealth Affairs, United Kingdom

Mikhail Gorbachev, former President of the Union of Soviet Socialist Republics (USSR)

Henry A. Kissinger, former U.S. Secretary of State

John McCain, U.S. Senator of Arizona

Sam Nunn, former U.S. Senator and Chairman of the Senate Armed Services Committee and CEO and Co-Chairman of the Nuclear Threat Initiative

Barack Obama, President of the United States of America

William J. Perry, former U.S. Secretary of Defense

General Colin Powell, former U.S. Secretary of State

Arnold Schwarzenegger, former Governor of California

George P. Shultz, former U.S. Secretary of State

Ted Turner, Founder and Co-Chairman of Nuclear Threat Initiative

**SUBJECTS AND
GRADE LEVELS**

Nuclear Tipping Point is recommended for use in world history, U.S. history, and other social studies classes, e.g., international relations, that are taught at the high school and collegiate levels.

GUIDING QUESTIONS

- What might happen if terrorists get a nuclear weapon?
- How accessible are materials and know-how to build nuclear weapons?
- What would the impact be of a nuclear attack on a major city in the United States or other part of the world?
- What can be done to raise awareness about nuclear threats and to help build support for the urgent actions needed to reduce nuclear dangers?
- Whose perspective in *Nuclear Tipping Point* was the most personally meaningful and why?

OBJECTIVES

Through *Nuclear Tipping Point* and the activities in this teacher's guide, students will:

- Consider the connection between nuclear weapons and deterrence during the Cold War
- Gain an understanding of the history of nuclear weapons
- Discuss the implications of the accessibility of materials and know-how to build nuclear weapons
- Consider historical and contemporary perspectives from world leaders on nuclear arms control
- Consider the aftermath of a nuclear attack on a major metropolitan area
- Consider the risks of terrorists obtaining nuclear weapons
- Consider the risks and benefits of nuclear energy, including how the nuclear power fuel cycle can create capacity for nuclear weapons
- Consider steps to a safer world
- Gain literacy skills in topics related to international security
- Become familiar with international security-related terminology
- Discuss ways to raise awareness of nuclear threats.

MATERIALS

- *Nuclear Tipping Point* film (55 minutes, 24 seconds)
- Glossary
- Multiple Choice/True-False Quiz
- Multiple Choice/True-False Quiz: Answer Sheet
- Guiding Questions
- Small-Group Activities #1–9
- Final Project: Film Reviews
- Remarks by U.S. President Barack Obama, Hradcany Square, Prague, Czech Republic, April 5, 2009
- “A World Free of Nuclear Weapons,” by George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, *The Wall Street Journal*, January 4, 2007
- “Toward a Nuclear-Free World,” by George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, *The Wall Street Journal*, January 15, 2008
- “Steps to a Safer World,” Nuclear Security Project

FILM CHAPTERS

Teachers may want to share *Nuclear Tipping Point* by chapters. Below is a list of the starting times for each chapter.

Chapter 1: Prologue, 00:00

Chapter 2: World Trade Center, 1993, 04:25

Chapter 3: George P. Shultz, Former U. S. Secretary of State, 06:03

Chapter 4: The Changing Threat, 10:21

Chapter 5: A More Dangerous World, 12:44

Chapter 6: A World Free of Nuclear Weapons, 20:10

Chapter 7: Reducing the Threat Step by Step, 26:23

Chapter 8: Connecting the Vision and the Steps, 35:09

Chapter 9: Turning Hope into Reality, 36:43

Chapter 10: Momentum for Change, 40:48

Chapter 11: The Mountaintop, 49:09

Chapter 12: Here’s What You Can Do Now, 51:53

Chapter 13: Acknowledgments, 53:44

CONNECTIONS
TO NATIONAL
STANDARDS FOR
HISTORY IN THE
SCHOOLS

Nuclear Tipping Point is useful for addressing World History “Era 9: The 20th Century since 1945: Promises and Paradoxes” (especially Standards 1B and 3A) and U.S. History “Era 10: Contemporary United States (1968 to the present)” (especially Standard 1C). World History Standards 1B and 3A and U.S. History Standard 1C are listed below.

World History Standard 1B

The student understands why global power shifts took place and the Cold War broke out in the aftermath of World War II.

Grade Level	Therefore, the student is able to
5–12	Explain how political, economic, and military conditions prevailing in the mid-1940s led to the Cold War. [Analyze cause-and-effect relationships]
7–12	Analyze major differences in the political ideologies and values of the Western democracies and the Soviet bloc. [Compare and contrast different ideas, values, and institutions]
7–12	Compare the impact of Soviet domination on Eastern Europe with changes that occurred in German and Japanese society under Allied occupation. [Compare and contrast differing values, behaviors, and institutions]
5–12	Explain the causes and international and local consequences of major Cold War crises, such as the Berlin blockade, the Korean War, the Polish workers’ protest, the Hungarian revolt, the Suez crisis, the Cuban missile crisis, the Indonesian civil war, and the Soviet invasion of Czechoslovakia. [Formulate historical questions]
7–12	Analyze interconnections between superpower rivalries and the development of new military, nuclear, and space technology. [Analyze cause-and-effect relationships]
9–12	Assess the impact of the Cold War on art, literature, and popular culture around the world. [Obtain historical data from a variety of sources]

www.sscnet.ucla.edu/nchs/standards

World History Standard 3A

The student understands major global trends since World War II.

Grade Level	Therefore, the student is able to
7–12	Explain the changing configuration of political boundaries in the world since 1900 and analyze connections between nationalist ideology and the proliferation of sovereign states. [Marshal evidence of antecedent circumstances]
7–12	Explain why the Cold War took place and ended and assess its significance as a 20th-century event. [Analyze multiple causation]
5–12	Compare causes, consequences, and major patterns of international migrations in the late 20th century with world population movements of the 19th century and the first half of the 20th. [Draw comparisons across eras and regions]
9–12	Define “postindustrial society” and assess the usefulness of this concept in comparing the late 20th century with the period from the industrial revolution to 1950. [Draw comparisons across eras and regions]
5–12	Assess the degree to which both human rights and democratic ideals and practices have been advanced in the world during the 20th century. [Formulate historical questions]
9–12	Analyze causes of economic imbalances and social inequalities among the world’s peoples and assess efforts made to close these gaps. [Employ quantitative analysis]
7–12	Analyze causes and consequences of the world’s shift from bipolar to multipolar centers of economic, political, and military power. [Analyze cause-and-effect relationships]
9–12	Analyze connections between globalizing trends in economy, technology, and culture in the late 20th century and dynamic assertions of traditional cultural identity and distinctiveness. [Analyze cause-and-effect relationships]

U.S. History Standard 1C

The student understands major foreign policy initiatives.

Grade Level	Therefore, the student is able to
7–12	Assess U.S. policies toward arms limitation and explain improved relations with the Soviet Union. [Examine the influence of ideas]
7–12	Assess Nixon’s policy of detente with the USSR and the People’s Republic of China. [Analyze multiple causation]
5–12	Evaluate Reagan’s efforts to reassert American military power and rebuild American prestige. [Hypothesize the influence of the past]
7–12	Explain the reasons for the collapse of communist governments in Eastern Europe and the USSR. [Analyze multiple causation]
9–12	Evaluate the reformulation of foreign policy in the post–Cold War era. [Analyze cause-and-effect relationships]

TEACHER
PREPARATION

1. Make copies of Multiple Choice/True-False Quiz, Guiding Questions, and Glossary for each student. In addition there are nine small-group activities for *Nuclear Tipping Point*. Make one copy of each of the nine small-group activities. Make copies of the Final Activity for each student.
2. Preview *Nuclear Tipping Point*, which is 55 minutes and 24 seconds in length. Become familiar with the information contained in this teacher’s guide. A list of people who appear in *Nuclear Tipping Point* is included in this guide.
3. Review the information on the International Atomic Energy Agency’s (IAEA) website, www.iaea.org.
4. Information about the IAEA is mentioned in the film. The section on “IAEA Safeguards Overview: Comprehensive Safeguards Agreements and Additional Protocols” is especially useful in preparing students for the film. Terms such as “additional protocols” are mentioned in the film.
5. Information on the film’s website is highly recommended. Some of the activities in this teacher’s guide are based on this website: www.NuclearTippingPoint.org.
6. Information on the website, Nuclear Security Project, is also highly recommended: www.NuclearSecurityProject.org.

USEFUL WEBSITES

www.NuclearTippingPoint.org

Film website includes links to the full film, an interactive timeline, and other background.

www.iaea.org

Website for the International Atomic Energy Agency explains key terms.

www.NuclearSecurityProject.org

Website discusses the initiative launched by George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn.

www.nti.org

Website for the Nuclear Threat Initiative includes a variety of resources, including primers, tutorials, and country profiles.

PROCEDURES:**DAYS ONE AND TWO**

1. Ask students if they have heard of the term “tipping point.” Ask students to define the term.
Tipping point: the critical point in an evolving situation that leads to a new and irreversible development. The term is said to have originated in the field of epidemiology when an infectious disease reaches a point beyond any local ability to control it from spreading more widely. A tipping point is often considered to be a turning point. (Source: WhatIs.com; whatIs.techtarget.com/definition/0,,sid9_gci1048494,00.html)
2. Inform students that they will be watching a film called *Nuclear Tipping Point*. Ask students to speculate on the meaning of tipping point in this context. Mention that they will be encouraged to consider the meaning of the term “nuclear tipping point” as they view the film.
3. Before showing the film, distribute a copy of the Multiple Choice/True-False Quiz to students. Allow students ten minutes to take the quiz. You may want to allow them to work in pairs or in small groups. Announce to the students that the quiz will not be graded. It is simply a pre-assessment of students’ knowledge of some of the topics in the film.
4. As a class, review the answers to the Multiple Choice/True-False Quiz, using the Multiple Choice/True-False Quiz: Answer Sheet as a guide.
5. Distribute a copy of the Glossary to each student. This may be helpful to students as they watch the film.
6. Read the following statement by President Barack Obama (Prague, Czech Republic, April 5, 2009). It is excerpted from a longer statement, which is included in this teacher’s guide.
The existence of thousands of nuclear weapons is the most dangerous legacy of the Cold War. Today, the Cold War has disappeared, but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. One nuclear weapon exploded in one city—be it New York or Moscow, Islamabad or Mumbai, Tokyo or Tel Aviv, Paris or Prague—could kill hundreds of thousands of people. And no matter where it happens, there is no end to what the consequences might be. So today, I state clearly and with conviction America’s commitment to seek the peace and security of a world without nuclear weapons.

7. Ask the following questions based on the excerpt. Briefly discuss each question.
 - What is the Cold War and deterrence?
 - What does President Obama mean when he states, “In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up”?
 - Why does he reference terrorists in his remarks?
 - Why do you think President Obama gave examples of certain cities in his remarks?
 - What other American leaders have made comments on seeking a world without nuclear weapons?
8. Distribute one set of questions from the handout, Guiding Questions, to each student. Ask students to consider the questions while watching the film. Show *Nuclear Tipping Point*. The film may need to be shown over two class periods.

PROCEDURES:
DAY THREE

1. To debrief *Nuclear Tipping Point*, ask the students with the same sets of questions to form small groups and to prepare three-minute summaries of responses to the questions. Groups should select presenters.
2. Ask each presenter to give a three-minute summary of his/her group's discussion.
3. Divide the class into nine small groups and distribute one of the small-group activities (listed below) to each group. Mention that the activities were developed to encourage each group to critically consider an important aspect of the film. Allow students the rest of the class period to work on their activities.

Activity One: Using Digital Timelines

Activity Two: Who Has Nuclear Weapons?

Activity Three: Cooperation vs. Catastrophe

Activity Four: Quotes

Activity Five: Quotes from Barack Obama

Activity Six: A World Without Nuclear Weapons

Activity Seven: Nuclear Energy

Activity Eight: Vision

Activity Nine: Taking Action

4. Ask each group to present a three-minute summary of its work.
5. Distribute one copy of Steps to a Safer World, Nuclear Threat Initiative to each small group. Allow students time to read through the steps. As a whole class, have students discuss the focus of their small-group tasks in the context of these steps.

ASSESSMENT

Use one or more of the following in an assessment of students' understanding of *Nuclear Tipping Point*.

1. Distribute a copy of Final Project: Film Reviews to each student. The handout includes excerpts of reviews of *Nuclear Tipping Point*.
2. Distribute one of the following op-ed articles. Ask students to write letters to the editor in response to one of the articles. Teachers may want to select one of the letters to send to the Nuclear Security Project at nuclearsecurityproject@nti.org.
 - "A World Free of Nuclear Weapons," by George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn. *The Wall Street Journal*, January 4, 2007
 - "Toward a Nuclear-Free World," by George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn. *The Wall Street Journal*, January 15, 2008
3. Distribute Remarks by President Barack Obama, Hradcany Square, Prague, Czech Republic, April 5, 2009. Ask students to develop five to ten questions they would ask President Obama about his remarks.
4. Activities #1–9 can also be used for assessment as well as student participation in discussions.

**OPTIONAL
ACTIVITIES**

1. Have students examine some of the reports and speeches offered on the Preventive Defense Project website, belfercenter.org/pdp. William J. Perry is a co-director of the Preventive Defense Project.
2. Have students analyze the entire text of President Barack Obama's remarks in Prague, Czech Republic on April 5, 2009.
3. Have students write essays on the following vision from *Nuclear Tipping Point*:
If we want other nations of the world to join us in a tough approach to preventing nuclear terrorism and the continued spread of nuclear weapons, we must be willing to recommit to the vision of a world without nuclear weapons and to lead the world in taking concrete actions to reduce nuclear dangers.
4. Have each student select one of the Steps to a Safer World and write a strategy on how such a step can be achieved.

GUIDING QUESTIONS

Prior to showing *Nuclear Tipping Point*, assign one of the following sets of questions to each student. To add some structure to the viewing of the film, ask each student to focus on the questions while watching the film. In addition, ask all students to consider whose perspective in *Nuclear Tipping Point* was most meaningful to them and why.

Cut along dotted lines. Give one strip to each student.

.....

What might happen if terrorists get a nuclear weapon?

Whose perspective in *Nuclear Tipping Point* was the most personally meaningful and why?

.....

How accessible are materials and know-how to build nuclear weapons?

Whose perspective in *Nuclear Tipping Point* was the most personally meaningful and why?

.....

What would the impact be of a nuclear attack on a major city in the United States or elsewhere in the world?

Whose perspective in *Nuclear Tipping Point* was the most personally meaningful and why?

.....

What can be done to raise awareness about nuclear threats and to help build support for the urgent actions needed to reduce nuclear dangers?

Whose perspective in *Nuclear Tipping Point* was the most personally meaningful and why?

.....

9-11 Commission—Formally the National Commission on Terrorist Attacks upon the United States, an independent, bipartisan commission created by congressional legislation in late 2002. The Commission was chartered to prepare a full and complete account of the circumstances surrounding the September 11, 2001, terrorist attacks, including preparedness for and the immediate response to the attacks, and to provide recommendations designed to guard against future attacks. It released its final report in July 2004.

Active defense—Active defenses use weapons systems or countermeasures to defend against an attack. Anti-ballistic-missile defenses are the most visible and controversial example today.

Air defenses—Systems (usually automatic gunfire or anti-aircraft missiles) deployed to defend territory or troops from attack by aircraft or cruise missiles.

Al-Qaeda or Al-Qa'ida—A radical Islamist terrorist organization established by Osama bin Laden (now deceased) responsible for attacks in the United States and worldwide, including the September 11, 2001, attacks on the World Trade Center and Pentagon. Al-Qaeda means “the base” in Arabic and acts as an umbrella organization for several terrorist groups around the world.

Arms control—Measures, typically bilateral or multilateral, taken to reduce or control a weapon system or armed forces. Such reductions or limitations are typically taken to increase stability between countries, reducing the likelihood or intensity of an arms race. They might affect the size, type, configuration, production, or performance characteristics of a weapon system, or the size, organization, equipment, deployment, or employment of armed forces.

Atomic—Pertaining to an atom, which is the basic unit of matter that consists of a dense nucleus of protons and neutrons and a cloud of electrons surrounding it.

Atomic bomb—Archaic term for fission-based nuclear weapon; see “nuclear weapon.”

Atomic energy—An archaic term; see “nuclear energy.”

Ballistic missile—A missile that travels to its target unpowered and unguided (although some more sophisticated missiles have reentry vehicles capable of limited terminal-phase guidance), after being launched at a velocity such that it will follow a flight trajectory to a desired point. Part of the flight of the payload of a longer-range ballistic missile may occur outside the atmosphere and involve the reentry of the payload into the atmosphere.

Bilateral—Negotiations, arrangements, agreements, or treaties that affect or are between two parties—generally two countries.

Bipartisan—Relating to, or supported by two groups, especially by two political parties.

Camp David—A retreat to the northwest of Washington, D.C., that is used by the president of the United States. Two framework agreements providing for a peace treaty between Egypt and Israel, and peace in the Middle East more broadly, were negotiated at Camp David and are known as the Camp David Accords.

Cold War—A term used to describe the state of tension between the non-communist and communist countries after World War II, led by the United States and the Soviet Union, respectively. The Cold War ended with the collapse of the Soviet Union in 1991.

Comprehensive Nuclear-Test-Ban Treaty (CTBT)—Opened for signature in 1996 at the U.N. General Assembly, an international treaty that prohibits all nuclear test explosions. The treaty establishes the Comprehensive Test Ban Treaty Organization (CTBTO) to ensure the implementation of treaty provisions and verify compliance with the treaty through a global monitoring system once it enters into force. Pending the treaty's entry into force, the Preparatory Commission of the CTBTO is charged with establishing the International Monitoring System (IMS) and promoting treaty ratifications. CTBT entry into force is contingent on ratification by 44 states with nuclear reactors on their territories, listed in (Article XIV) Annex 2 of the treaty.

Cooperative Threat Reduction program—A U.S. Department of Defense (DOD) program established in 1992 by the U.S. Congress, through legislation sponsored primarily by Senators Sam Nunn and Richard Lugar. It is the largest and most diverse U.S. program addressing former Soviet weapons of mass destruction threats. The program has focused primarily on (1) destroying vehicles for delivering nuclear weapons (e.g., missiles and aircraft), their launchers (such as silos and submarines), and their related facilities; (2) securing former Soviet nuclear weapons and their components; and (3) destroying Russian chemical weapons. The term is often used generically to refer to all U.S. nonproliferation programs in the former Soviet Union—and sometimes beyond—including those implemented by the U.S. Departments of Energy, Commerce, and State.

Cruise missile—An unmanned self-propelled guided vehicle that sustains flight through aerodynamic lift for most of its flight path.

Deployment—The positioning of military forces—both nuclear and conventional—in conjunction with military planning.

Deterrence—The actions of a state or group of states to dissuade a potential adversary from initiating an attack or conflict by the credible threat of retaliation. To be effective, deterrence should demonstrate to an adversary that the costs of an attack would outweigh any potential gains.

Dirty bomb—An informal term for a radiological dispersal device (RDD), which pairs conventional explosives with radiological materials. Once detonated, the conventional explosives disperse the radioactive material, radioactively contaminating the target area.

Enriched uranium—Uranium with an increased concentration of the isotope U-235 relative to natural uranium. Natural uranium contains 0.7 percent U-235, whereas nuclear weapons typically require uranium enriched to very high levels (see “highly enriched uranium” and “weapons-grade”). Nuclear power-plant fuel typically uses uranium enriched to 3 to 5 percent U-235, which is not sufficiently enriched to be used for nuclear weapons.

Fallout—The process of the descent to the earth’s surface of particles contaminated with radioactive material from a radioactive cloud. The term is also applied in a collective sense to the contaminated particulate matter itself. The early (or local) fallout is defined, somewhat arbitrarily, as those particles that reach the earth within 24 hours after a nuclear explosion. The delayed (or worldwide) fallout consists of the smaller particles that ascend into the upper troposphere and stratosphere, to be carried by winds to all parts of the earth. The delayed fallout is brought to earth, mainly by rain and snow, over extended periods ranging from months to years, and can contaminate the animal food chain.

First strike—The launch of a surprise attack to considerably weaken or destroy an adversary’s military installations or nuclear forces and thus severely reduce its ability to attack or retaliate.

Fissile material—Material that is capable of sustaining an explosive fission chain reaction, because the materials’ nuclei are able to be split by neutrons of various speeds. Uranium-235, plutonium-239, and uranium-233 are the most prominently discussed fissile materials for peaceful and nuclear weapons purposes, although many other fissile isotopes exist.

Global Threat Reduction Initiative (GTRI)—Established by the U.S. National Nuclear Security Administration (NNSA; within the U.S. Department of Energy) in May 2004, its goal is to identify, secure, remove and/or facilitate the removal of vulnerable nuclear and radiological materials around the world. This is achieved through providing financial and/or technical assistance to foreign governments. To date, much of the program has focused on the former Soviet Union, but the NNSA is expanding the program to other states, including in Southeast Asia.

Highly enriched uranium (HEU)—Uranium in which the Uranium-235 (U-235) isotope (0.7 percent in natural uranium) is increased, via the enrichment process, to 20 percent U-235 or higher. HEU is generally considered “weapons-grade” at enrichment levels of 90 percent or higher, but it can be weapons-useable at lower enrichment levels.

Hydrogen bomb—An archaic term, see “nuclear weapon” and “thermonuclear weapon.”

International Atomic Energy Agency (IAEA)—Founded in 1957 and based in Vienna, Austria, the IAEA is an autonomous international organization under the United Nations. The Agency’s mandate is promotion of peaceful uses of nuclear energy, technical assistance in this area, and verification that nuclear materials and technology stay in peaceful use. Article III of the Nuclear Non-Proliferation Treaty (NPT) requires non-nuclear weapon states party to the NPT to accept safeguards administered by the IAEA. The IAEA consists of three principal organs: the General Conference (of member states), the Board of Governors, and the Secretariat.

Kiloton—A term used to quantify the energy of a nuclear explosion that is equivalent to the explosion of 1,000 tons of trinitrotoluene (TNT) conventional explosive.

Loose nukes—Originally referred to poorly guarded nuclear weapons in the former Soviet Union; today, this is an informal term used to refer to nuclear weapons, materials, or know-how that are vulnerable to theft or illicit diversion.

Moscow Treaty—See “Strategic Offensive Reductions Treaty.”

Mutually assured destruction (MAD)—A term originating in the Cold War, which described the deterrence relationship between the United States and the Soviet Union beginning in the 1950s. MAD assumes that both sides possess an assured second-strike capability such that a nuclear first-strike by either side would provide no strategic advantage—because both states would suffer unacceptably high damage in the ensuing nuclear war.

New START—A treaty between the United States and Russia on further limitations and reductions of strategic offensive weapons, signed on April 8, 2010, which entered into force on February 5, 2011. Under the New START provisions, the two sides have to reduce the number of deployed strategic warheads to no more than 1,500, and the number of deployed strategic delivery vehicles to no more than 800, within seven years of the treaty’s entry into force. The treaty’s verification measures are based on the earlier verification system created under START I (see “Strategic Arms Reduction Talks”). New START superseded the Moscow Treaty, and its duration is ten years, with an option of extension for up to five years.

North Atlantic Treaty Organization (NATO)—The North Atlantic Treaty Organization is a military alliance that was formed in 1949 to help deter the Soviet Union from attacking Europe. The Alliance is based on the North Atlantic Treaty, which was signed in Washington, D.C., on April 4, 1949. The treaty originally created an alliance of ten European and two North American independent states, but today NATO has 28 members who have committed to maintaining and developing their defense capabilities, to consulting on issues of mutual security concern, and to the principle of collective self-defense. NATO is also engaged in out-of-area security operations, most notably in Afghanistan, where Alliance forces operate alongside other non-NATO countries as part of the International Security Assistance Force (ISAF).

Nuclear energy—The energy liberated by a nuclear reaction (fission or fusion) or by radioactive decay.

Nuclear Non-Proliferation Treaty (NPT)—Signed in 1968, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is the most widely adhered-to international security treaty. The three pillars of the NPT are nuclear disarmament, nonproliferation, and peaceful uses of nuclear energy. The Treaty stipulates that non-nuclear-weapon states will not seek to acquire nuclear weapons and will accept IAEA safeguards, while nuclear-weapon states commit not to transfer nuclear weapons to other states. All states have a right to the peaceful use of nuclear energy, and should assist one another in its development. Article VI of the NPT commits states possessing nuclear weapons to negotiate in good faith toward halting the arms race and the complete elimination of nuclear weapons. The NPT provides for conferences of member states to review treaty implementation at five-year intervals. Initially of a 25-year duration, the NPT was extended indefinitely in 1995.

Nuclear power plant—An electricity generating facility using a nuclear reactor as its heat source to provide steam to a turbine generator.

Nuclear Suppliers Group—A group of states that cooperate to ensure that nuclear exports are made only under safeguards, physical protection, nonproliferation conditions, and other appropriate constraints. It first met in 1975 in London. As of May 2011, the NSG had 46 members.

Nuclear umbrella—Also known as extended nuclear deterrence. A country protected from potential adversaries by the nuclear weapons of an ally is said to be under a nuclear umbrella. A nuclear weapon state may provide a nuclear umbrella to an ally in order to deter nuclear or conventional attacks on that state by an adversary.

Nuclear weapon—A device that releases nuclear fission energy in an explosive manner as the result of nuclear chain reactions involving fission, or fission and fusion, of atomic nuclei. Such weapons are also sometimes referred to as atomic bombs (a fission-based weapon), or boosted fission weapons (a fission-based weapon deriving a slightly higher yield from a small fusion reaction), or hydrogen bombs/thermonuclear weapons (a weapon deriving a significant portion of its energy from fusion reactions).

Nuclear-weapon states—As defined by Article IX, paragraph 3 of the Nuclear Non-Proliferation Treaty, the five states that detonated a nuclear device prior to January 1, 1967 (China, France, the Soviet Union, the United Kingdom, and the United States). Coincidentally, these five states are also permanent members of the U.N. Security Council. States that acquired and/or tested nuclear weapons subsequently are not internationally recognized as nuclear-weapon states.

Nunn-Lugar—See “Cooperative Threat Reduction program.”

Plutonium—A transuranic element with atomic number 94 produced when uranium is irradiated in a reactor. It is used primarily in nuclear weapons and, along with uranium, in mixed-oxide (MOX) fuel. Plutonium-239 is the most suitable isotope for use in nuclear weapons.

Proliferation (of weapons of mass destruction)—The spread of weapons of mass destruction (WMD). Horizontal proliferation refers to the spread of WMD to states that have not previously possessed them. Vertical proliferation refers to an increase in the amount or capabilities of any currently existing WMD arsenals within a state.

Protocol—A negotiated document often meant as a supplement to a treaty or agreement, stipulating specific actions that should be taken to fulfill the terms of the agreement or modifying the agreement.

Radiation (ionizing radiation)—Radiation that has sufficient energy to remove electrons from substances that it passes through, forming ions. May include alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions.

Radiation syndrome (radiation sickness)—The complex of symptoms resulting from excessive exposure of the human body to acute ionizing radiation. The earliest of these symptoms are nausea, fatigue, vomiting, and diarrhea, which may be followed by loss of hair, hemorrhage, inflammation of the mouth and throat, and general loss of energy. In severe cases, where the radiation has been approximately 1,000 rad (acute dose) or more, death may occur within two to four weeks. Those who survive six weeks after the receipt of a single large dose of radiation to the whole body may generally be expected to recover. Over the long-term, there are also stochastic health effects from radiation exposure (in contrast to acute effects), meaning an increased probability of cancers and other effects on a person's health.

Ratification—Implementing the formal process established by a country to legally bind its government to a treaty, such as approval by parliament. In the United States, treaty ratifications require approval by the president after he or she has received the advice and consent of two-thirds of the Senate. The country then submits the required legal instrument of ratification to the treaty's depository governments. Procedures to ratify a treaty follow its signature (see “signature”).

Reykjavik Summit—A summit meeting between U.S. President Ronald Reagan and Soviet President Mikhail Gorbachev, held in Reykjavik, the capital of Iceland, on October 11–12, 1986.

“Rogue” state—Notably used during the Clinton Administration, the term refers to states that the United States and its allies regard as hostile and who are often suspected of developing or deploying WMD. Although the U.S. Department of State now discourages using this term, it is still used by some U.S. officials in reference to Iran, Libya, North Korea, and Syria. The term “states of concern” has replaced the term “rogue states” because of its political sensitivity.

Safeguards (nuclear)—A system of accounting, containment, surveillance, and inspections to verify that states are in compliance with their international obligations concerning the supply and use of civil nuclear materials. The term often refers to safeguards as implemented by the International Atomic Energy Agency. All nuclear facilities in non-nuclear weapons state members of the Nuclear Non-Proliferation Treaty (NPT) are under safeguards, while nuclear weapon states have voluntarily placed certain civil facilities under safeguards.

Signature—The signing of a treaty by a senior representative of a country (such as the president or secretary of state), which indicates that the country accepts the treaty and commits, until the country completes its ratification process, not to take any actions that would undermine its purposes, according to the Vienna Convention on the Law of Treaties.

Spent nuclear fuel—Nuclear fuel that has been used in a nuclear reactor. Once it has been used, it is highly radioactive and extremely physically hot, necessitating special remote handling. Fuel is considered “self-protecting” if it is sufficiently radioactive so those who might be seeking to divert it would be not able to handle it directly without suffering acute radiation exposure.

Strategic Arms Limitation Talks (SALT I & II)—The Strategic Arms Limitations Talks between the Soviet Union and the United States were aimed at limiting missile systems and other strategic armaments. The first round of talks (SALT I) was held from 1969 to 1972, and the second from 1972 to 1979. SALT I concluded on May 20, 1971, when the ABM Treaty and the Interim Agreement limiting strategic offensive arms were signed. The SALT II Treaty was signed on June 18, 1979, but was not ratified by either country, although both committed to abiding by its limits.

Strategic Arms Reduction Talks (START I & II)—Refers to the negotiations between the United States and the Soviet Union/Russian Federation, held from 1982 to 1993, to limit and reduce the numbers of strategic offensive nuclear weapons in each country’s nuclear arsenal. The talks resulted in the 1991 START I Treaty, which entered into force in December 1994, and the 1993 START II Treaty. START I was originally negotiated between the United States and the Soviet Union, and subsequently applied to the United States, the Russian Federation, Belarus, Kazakhstan, and Ukraine. Belarus, Kazakhstan, and Ukraine all renounced their possession of nuclear weapons under the 1992 Lisbon Protocol to START I, and transferred all nuclear weapons previously on their territory to Russia by 1995. START II, which called for further reductions in the United States and Russia, was ratified by the two countries, but never entered into force. Following the U.S. withdrawal from the Anti-Ballistic Missile Treaty (ABM) in 2002, Russia declared START II void. START I expired on December 5, 2009, and was followed by the New START treaty.

Strategic Offensive Reductions Treaty (SORT, or Moscow Treaty, 2002)—Under this Treaty, the United States and Russia are obliged to reduce their deployed strategic nuclear warheads to a level of 1,700–2,200 by December 31, 2012. The Moscow Treaty was superseded by the New START treaty, which entered into force on February 5, 2011.

Tactical nuclear weapon—Also known as nonstrategic nuclear weapons. This category of weapons includes short-range nuclear weapons, such as artillery shells, bombs, and short-range missiles, deployed for use in battlefield operations.

Terrorism—Using violence or threats to intimidate or coerce, especially for political purposes.

Thermonuclear weapon—A nuclear weapon in which the fusion of light nuclei, such as deuterium and tritium, contributes the main explosive energy. The bombs are triggered by a fission weapon in order to reach high enough temperatures and pressures so that fusion can take place. Also archaically referred to as a hydrogen bomb.

Trilateral Statement on the Non-Proliferation of Weapons of Mass Destruction and the Means of Their Delivery

Signed by U.S. President Bill Clinton, Russian President Boris Yeltsin, and Ukrainian President Leonid Kravchuk in January 1994, the Trilateral Statement committed Ukraine to rid itself of nuclear weapons and to transfer 200 SS-19 and SS-24 warheads to Russia over a ten-month period. The Trilateral Statement also specified that Ukraine was to deactivate its SS-24s within the same ten-month period. The United States and Russia agreed to guarantee Ukraine's borders and grant Ukraine security guarantees as long as Ukraine joined the NPT as a non-nuclear weapon state. Ukraine finished transferring its nuclear weapons to Russia in 1996 and acceded to the NPT as a non-nuclear weapon state in 1994.

Unauthorized launch—The launch of nuclear missiles absent the authorization of the leader or leaders legally empowered with such authority. The term generally refers to an accidental or unintended launch that occurs because of faulty intelligence, systematic or mechanical failures, or the mistaken actions of military personnel.

United Nations General Assembly—The full body of the United Nations including all member states. It is responsible for much of the work of the United Nations, including controlling finances, passing resolutions and electing nonpermanent members of the Security Council (See "United Nations Security Council"). It has two subsidiary bodies particularly dealing with security and disarmament: the U.N. General Assembly Committee on Disarmament and International Security (First Committee), and the U.N. Disarmament Commission.

United Nations Security Council—Under the United Nations Charter, the Security Council has primary responsibility for maintaining international peace and security. The Council consists of fifteen members, five of which are permanent—China, France, Russia, the United Kingdom, and the United States—who are permanent members due to their status as the primary victors in World War II. The other ten members are elected by the General Assembly for two-year terms. The five permanent members have veto powers.

Uranium—Uranium is a metal with atomic number 92. See "enriched uranium" and "highly enriched uranium."

Verification—The process of using mechanisms such as satellites, seismic monitoring, or on-site inspections to collect data that demonstrate a party's compliance with an agreement or treaty.

Weapons-grade—Refers to the nuclear materials that are most suitable for the manufacture of nuclear weapons, e.g., uranium (U) enriched to 90 percent U-235 or plutonium (Pu) that is primarily composed of Pu-239 and contains less than 7 percent Pu-240. Crude weapons (i.e., improvised nuclear devices) could be fabricated from lower-grade materials.

Weapons of mass destruction (WMD)—Nuclear, biological, or chemical weapons.

Yield—The total amount of energy released by a nuclear explosion, generally measured in equivalent tons of trinitrotoluene (TNT). A kiloton is equivalent to 1,000 tons of TNT; a megaton is equivalent to one million tons of TNT.

Note: Some of the entries in this glossary are derived from the glossary produced independently for the NTI website by the James Martin Center for Nonproliferation Studies at the Monterey Institute of International Studies. For a more extensive glossary, see the NTI website at www.nti.org.

MULTIPLE CHOICE/TRUE-FALSE QUIZ

1. Deterrence theory is:

Circle one or more.

- a. a military strategy that was developed during the Cold War.
- b. especially relevant with regard to using nuclear weapons.
- c. important still with regard to U.S. foreign policy regarding the development of nuclear technology in North Korea and Iran.
- d. all of the above.

2. The raw materials used to make a nuclear bomb are highly enriched uranium and plutonium. Highly enriched uranium and plutonium can be found in the following approximate number of countries, sometimes under very lax security.

Circle one.

2 10 25 30 40 100

3. After World War II, the intense rivalry for global power and influence between primarily the following two countries was known as the Cold War.

Circle two.

Japan Soviet Union China United States

4. Two atomic bombs were dropped on Japan on August 6 and 9, 1945.

Circle the names of the two cities.

Hiroshima Tokyo Kyoto Nagasaki

5. Circle the three countries that do not have nuclear weapons.

Brazil Canada China France India Israel
North Korea Pakistan Russia South Africa
United Kingdom United States NATO countries

6. The International Atomic Energy Agency has said that there have been more than the following number of nuclear-smuggling related incidents since 1993. Nearly 20 of these have involved the transfer of weapons-usable material.

Circle one.

50 120 550 1,300

7. The amount of highly enriched uranium used in the atomic bomb dropped on Hiroshima could have fit into a:

Circle one.

1-gallon container 8-ounce cup 6-gallon container

8. Select the U.S. president (from the options below) who made the following statement:

"Today, every inhabitant of this planet must contemplate the day when this planet may no longer be habitable. Every man, woman, and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads, capable of being cut at any moment by accident or miscalculation or by madness. The weapons of war must be abolished before they abolish us."

Circle one answer.

President Ronald Reagan
President Barack Obama
President John F. Kennedy

9. The following leader was the last president of the Soviet Union.

Circle one answer.

Konstantin Chernenko
Mikhail Gorbachev
Vladimir Putin

continued

10. Since the end of the Cold War, the United States, and the countries of the former Soviet Union, including Russia, working together, have deactivated or destroyed the following number of nuclear warheads as well as hundreds of missiles, launchers, bombers, submarines, test tunnels, and other tools of nuclear war.

Circle one answer.

1,000 3,000 5,000 7,000 10,000

11. The Comprehensive Nuclear Test Ban Treaty is an international treaty that prohibits all nuclear explosions.

Circle TRUE or FALSE.

12. An atomic bomb is a weapon that uses fissile (splitting of the nucleus of a heavy atom into two lighter nuclei) material in isotopes of uranium and plutonium to provide explosive power.

Circle TRUE or FALSE.

13. Under the United Nations Charter, the United Nations Security Council has primary responsibility for maintaining international peace and security.

Circle TRUE or FALSE.

14. International Atomic Energy Agency (IAEA) is charged with the control of nuclear technology to prevent nuclear weapons proliferation but not the development of nuclear energy for peaceful purposes.

Circle TRUE or FALSE.

MULTIPLE CHOICE/TRUE-FALSE QUIZ:

ANSWER SHEET

1. Deterrence theory is:

Circle one or more.

- a. a military strategy that was developed during the Cold War.
- b. especially relevant with regard to using nuclear weapons.
- c. important still with regard to U.S. foreign policy regarding the development of nuclear technology in North Korea and Iran.
- d. all of the above.

2. The raw materials used to make a nuclear bomb are highly enriched uranium and plutonium. Highly enriched uranium and plutonium can be found in the following approximate number of countries, sometimes under very lax security.

*Circle one.*2 10 25 30 **40** 100

3. After World War II, the intense rivalry for global power and influence between primarily the following two countries was known as the Cold War.

*Circle two.*Japan **Soviet Union** China **United States**

4. Two atomic bombs were dropped on Japan on August 6 and 9, 1945.

*Circle the names of the two cities.***Hiroshima** Tokyo Kyoto **Nagasaki**

5. Circle the three countries that do not have nuclear weapons.

Brazil **Canada** China France India Israel
 North Korea Pakistan Russia **South Africa**
 United Kingdom United States NATO countries

6. The International Atomic Energy Agency has said that there have been more than the following number of nuclear-smuggling related incidents since 1993. Nearly 20 of these have involved the transfer of weapons-usable material.

*Circle one.*50 120 550 **1,300**

7. The amount of highly enriched uranium used in the atomic bomb dropped on Hiroshima could have fit into a:

*Circle one.***1-gallon container** 8-ounce cup 6-gallon container

8. Select the U.S. president (from the options below) who made the following statement:

"Today, every inhabitant of this planet must contemplate the day when this planet may no longer be habitable. Every man, woman, and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads, capable of being cut at any moment by accident or miscalculation or by madness. The weapons of war must be abolished before they abolish us."

Circle one answer.

President Ronald Reagan

President Barack Obama

President John F. Kennedy

9. The following leader was the last president of the Soviet Union.

Circle one answer.

Konstantin Chernenko

Mikhail Gorbachev

Vladimir Putin

continued

10. Since the end of the Cold War, the United States, and the countries of the former Soviet Union, including Russia, working together, have deactivated or destroyed the following number of nuclear warheads as well as hundreds of missiles, launchers, bombers, submarines, test tunnels, and other tools of nuclear war.

Circle one answer.

1,000 3,000 5,000 **7,000** 10,000

11. The Comprehensive Nuclear Test Ban Treaty is an international treaty that prohibits all nuclear explosions.

Circle **TRUE** or FALSE.

12. An atomic bomb is a weapon that uses fissile (splitting of the nucleus of a heavy atom into two lighter nuclei) material in isotopes of uranium and plutonium to provide explosive power.

Circle **TRUE** or FALSE.

13. Under the United Nations Charter, the United Nations Security Council has primary responsibility for maintaining international peace and security.

Circle **TRUE** or FALSE.

14. International Atomic Energy Agency (IAEA) is charged with the control of nuclear technology to prevent nuclear weapons proliferation but not the development of nuclear energy for peaceful purposes.

Circle **TRUE** or **FALSE**. The International Atomic Energy Agency (IAEA) is charged with the control of nuclear technology to prevent nuclear weapons proliferation and the development of nuclear energy for peaceful purposes.

ACTIVITY ONE: USING DIGITAL TIMELINES

Explore the “Timeline” (under “Interactive Maps”) on the *Nuclear Tipping Point* website, www.NuclearTippingPoint.org. Research one of the nine events mentioned in the beginning of the film or one of the thirteen events on the timeline and develop an electronic presentation, e.g., PowerPoint, or poster presentation based on the event.

Your presentation should include at least three of the following:

- A summary of the events that led up to the event
- Primary or secondary source documents that present multiple perspectives on the event
- Analysis of the language used in the documents
- Analysis and interpretation of the event

Events from the film:

1. World Trade Center, 1993
2. USS Cole, 2000
3. September 11, 2001
4. Bali Nightclub, 2002
5. Madrid Train Station, 2004
6. Beslan, Russia, 2004
7. London, 2005
8. Mumbai, India, Train Bombings, 2006
9. Mumbai, India, Siege, 2008

Dates and events from the timeline:

1. August 1945: Atomic bombings of Japan
2. August 1949: USSR detonates its first atomic bomb
3. October 1952: United Kingdom tests its first atomic bomb
4. February 1960: France tests a nuclear bomb
5. October 1962: Cuban Missile Crisis
6. October 1964: China explodes its first atomic bomb
7. May 1974: India conducts its first nuclear detonation
8. May 1987: Israel tests long-range nuclear-capable missile
9. May 1998: India conducts five underground nuclear weapons tests
10. September 2001: Terrorists attack the World Trade Center towers in New York City and the Pentagon Headquarters in Virginia
11. October 2006: North Korea conducts its first nuclear test
12. May 2009: North Korea performs its second underground nuclear test
13. September 2009: The United States, France, and Britain announce that Iran is building a second centrifuge facility

**ACTIVITY TWO:
WHO HAS NUCLEAR
WEAPONS?**

Using the *Nuclear Tipping Point* website, click on the “Interactive Maps” link and review at least three of the following countries or groups of countries (that is, NATO countries). Compare and contrast these countries and look for recent nuclear weapons-related news on these countries using a search engine like Google or Yahoo. Write an op-ed piece (communicate an opinion on an issue or issues) about one of the articles.

China

France

India

Israel

NATO countries

North Korea

Pakistan

Russia

United Kingdom

U.S.A.

ACTIVITY THREE: COOPERATION VS. CATASTROPHE

Using the *Nuclear Tipping Point* website, click on the “Cooperation” arrow and review the steps for cooperation.

- Securing all nuclear weapons and materials globally to the highest standards.
- Discarding Cold War practices for U.S. and Russian nuclear forces to decrease the danger of accidental, mistaken, or unauthorized launch.
- Reducing substantially nuclear forces in all states that possess them.
- Eliminating short-range battlefield nuclear weapons.
- Halting the production of plutonium and highly enriched uranium for nuclear weapons globally.
- Developing cooperative missile defense and early warning systems.
- Adopting a process for bringing the Comprehensive Test Ban Treaty into effect.
- Developing a new international system to manage the risks of producing fuel for nuclear power.
- Phasing out using highly enriched uranium in civil commerce.
- Strengthening verification and enforcement capabilities.
- Redoubling efforts to resolve regional conflicts.

Using the *Nuclear Tipping Point* website, click on the “Catastrophe” arrow and review the text that appears.

If a nuclear bomb exploded in a major metropolitan area...the initial death toll would be tens or hundreds of thousands...

- A domestic refugee crisis would occur as millions of evacuees try to leave the area.
- A devastating radiation plume would rain down lethal amounts of radiation.
- Hundreds of thousands would be in urgent need of doctors and hospitals that will be stretched to the limit or decimated.

Design a front page of a newspaper (or a website) at some future date. Include a headline, short articles, weather forecast, and images, e.g., political cartoons, charts, photographs. Include information from the “cooperation” and/or “catastrophe” sections of the website. Have we made progress in the areas of “cooperation”? Has a “catastrophe” struck?

4

ACTIVITY FOUR:
QUOTES

Review the following quotes from *Nuclear Tipping Point*. Develop two political cartoons based on two of the quotes. Consider the following questions while developing the political cartoons:

- **Who are the characters in the cartoon?**
- **Will you include any text in the cartoon? A caption?**
- **Will you include any symbols in the cartoon?**
Why or why not?
- **What viewpoint will you express in the cartoon?**
- **What would be an opposing viewpoint to the cartoon?**

General Colin Powell: ... and the one thing I convinced myself of after all these years of exposure to the use of nuclear weapons is that they were useless. They could not be used. You could have deterrence with an even lower number of weapons, but...why stop there? Why not continue on? Why not get rid of them altogether? The real threat now is not from states that understand that you cannot use these weapons without inviting suicidal response, but terrorists who do not care about suicidal response, terrorists who are prepared to commit suicide themselves. So it is important at this point in our international history that we all come together behind this initiative that you are going to hear about, and make sure that we start a process that will lead to the reduction in the number of nuclear weapons that exist in the arsenals of the world now, that will deter other nations from moving forward

on nuclear weapons programs, but above all, will capture and contain the elements that are out there, the devices that are out there, the technology that is out there, the uranium and plutonium sources that may be out there that a terrorist can get his hands on to try to develop a rudimentary or real nuclear weapon.

Narrator: The 9-11 Commission reports Al Qaeda has been trying to acquire or make a nuclear weapon for over a decade.

Secretary George Shultz: And we had hardly left our harbor [in 1945] when news came to the ship that something called an "atomic bomb" had been dropped, and we asked around. Nobody had a clue about what it was. Our ship lumbered along and then we heard another atomic bomb had been dropped. By the time we got to port, the war was over. We couldn't help but make the association that these two atomic bombs may have saved our lives. My thinking about these weapons evolved. At first what you are trying to do is understand what is this anyway. And then you see pictures of Hiroshima and Nagasaki, and you begin to see the horror and the inhumanity of them.

Secretary Henry Kissinger: For me, the most searing question was what I would actually tell the president if he turned to me and said "I've done everything I can in the diplomatic field and my only option now is to use nuclear weapons." Of all the decisions that were before me, that was the most haunting one.

Senator Sam Nunn: Back during the Cold War, we basically had a period, as I view it, of very high risk. But we had stability in one strange paradoxical sense. That is, both sides knew that if there was a war or if a conventional war became a nuclear war, that the survival of their own nation was at stake.

Secretary William Perry: It was about 1978 when I was awoken by a phone call at 3:00 in the morning from the general who was the watch officer at the North American Air Defense Command. He told me that his computers were showing 200 missiles on the way from the Soviet Union to the United States. Now that, of course, was a false alarm. The point of that story is that the danger of a nuclear war—the danger of a nuclear holocaust—was not academic to me. That experience in particular brought it very close to my consciousness.

Secretary Shultz: People talk about the concept of deterrence. It worked in an uneasy way during the Cold War when you had two countries, mainly. But the more countries you have, the more difficult that concept is.

Secretary Kissinger: And if the existing nuclear countries cannot develop some restraints among themselves—in other words, if nothing fundamental changes—then I would expect the use of nuclear weapons in some ten-year period is very possible.

Secretary Shultz: If you can learn how to enrich fuel for a nuclear power plant, you've learned how to enrich it for a weapon.

Secretary Kissinger: And we have seen already in a country like Pakistan, which is a reasonably well developed country, that a whole system of proliferation was either possible or tolerated, that spread nuclear technology to Libya, North Korea, and some other rogue states.

Secretary Perry: As nations like Iran, Pakistan, and North Korea get nuclear bombs, then the probability increases that one or more of those bombs will fall into the hands of a terror group.

Secretary Kissinger: The classical notion of deterrence was that there were some consequences before which aggressors and evildoers would recoil. In the world of suicide bombers, that calculation doesn't operate in any comparable way.

Secretary Shultz: And if you think of the people who are doing suicide attacks, and people like that get a nuclear weapon, they are almost by definition undeterrable. And if you have terrorists get something, then you don't even know the return address. So, I think it's a very dangerous moment.

ACTIVITY FIVE: QUOTES FROM BARACK OBAMA

The following comments from President Barack Obama were highlighted in *Nuclear Tipping Point*. Design two pages for a future U.S. history textbook that include one or both (or sections of one or both) quotes. Make sure you include some context for the quote(s). Also, make sure you incorporate some visuals, e.g., photographs, charts, maps.

President Barack Obama (Prague, Czech Republic, April 5, 2009): The existence of thousands of nuclear weapons is the most dangerous legacy of the Cold War. Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. The technology to build a bomb has spread. Terrorists are determined to buy, build, or steal one. One nuclear weapon exploded in one city—be it New York or Moscow, Islamabad or Mumbai, Tokyo or Tel Aviv, Paris or Prague—could kill hundreds of thousands of people. And no matter where it happens, there is no end to what the consequences might be. So today, I state clearly and with conviction America’s commitment to seek the peace and security of a world without nuclear weapons.

President Barack Obama (United Nations Security Council, September 24, 2009): We harbor no illusions about the difficulty of bringing about a world without nuclear weapons. We know there are plenty of cynics, and that there will be setbacks to prove their point. But there will also be days like today that push us forward—days that tell a different story. It is a story of a world that understands that no difference or division is worth destroying all that we have built and all that we love. It is a recognition that brings people of different nationalities, ethnicities, and ideologies together. In my own country, it has brought Democrat and Republican leaders together—leaders like George Shultz, Bill Perry, Henry Kissinger, and Sam Nunn, who are with us here today.

ACTIVITY SIX: A WORLD WITHOUT NUCLEAR WEAPONS

Consider the following quote:

“ Memorials are about loss and sacrifice but also about perseverance and triumph. They are about making sense of what happened, and the impulse to send lessons into the future.”

—DELIA M. RIOS, “MEMORIALS, LIKE MEMORY ITSELF, CAN BE COMPLEX,” *SAN JOSE MERCURY NEWS*, MAY 30, 2004, P. 3B.

Discuss whether you agree or disagree with the quote. Review the following quotes from *Nuclear Tipping Point* and design a memorial to victims of nuclear weapons and/or terrorism. Draw the memorial on a large sheet of butcher paper or use a computer drawing program.

You might consider some of the following questions.

- **Where would you build the memorial?**
- **Would you incorporate audio-visual materials?**
- **Would you inscribe quotes on a memorial wall? If so, would you use historic quotes (such as those below) and/or other quotes from *Nuclear Tipping Point*?**
- **Would you include memorabilia? If so, what?**
- **What perspectives would you underscore at the memorial?**

Secretary Perry: First I should say that the call to eliminate nuclear weapons is not new. It has been stated many times by many people.

.....

President John F. Kennedy (United Nations, September 25, 1961):

Today, every inhabitant of this planet must contemplate the day when this planet may no longer be habitable. Every man, woman, and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads, capable of being cut at any moment by accident or miscalculation or by madness. The weapons of war must be abolished before they abolish us.

.....

President Ronald Reagan (Second Inaugural Address, January 21, 1985):

There is only one way safely and legitimately to reduce the cost of national security and that is to reduce the need for it. And this we are trying to do in negotiations with the Soviet Union. We are not just discussing limits on a further increase of nuclear weapons. We seek, instead, to reduce their number. We seek the total elimination, one day, of nuclear weapons from the face of the Earth.

7
ACTIVITY SEVEN:
NUCLEAR ENERGY

Research the benefits and risks of nuclear energy and develop a tri-fold brochure that summarizes this information for your fellow students. You may want to include one or more quotes (examples below) in your brochure. Make sure your brochure has a striking design, which draws attention to this issue.

Narrator: And as energy prices continue to rise, harnessing the power of the atom is seen as a clean source of electricity.

.....

Secretary Perry: In order to prevent carbon from being spewed into the atmosphere, which can precipitate global warming, more and more nations are turning to nuclear reactors, which is a perfectly reasonable action for them to take. But the danger of that is that in generating the fuel for the nuclear reactors, the country has gone through a process which could, if continued for another few cycles, would lead to the same kind of uranium that could be used for a nuclear bomb. The solution to the problem is ... to allow countries to have nuclear reactors, which deals with the environmental problem, but under the conditions in which they do not have control of the fuel cycle. They do not process the fuel.

.....

Secretary Shultz: If you can learn how to enrich fuel for a nuclear power plant, you've learned how to enrich it for a weapon.

.....

Senator Nunn: Nuclear power does furnish a lot of hope for mankind but only if it's safe and only if it's secure.

ACTIVITY EIGHT: VISION

The following quotes from *Nuclear Tipping Point* focus on vision. Review them and write a response to at least two of them. Also, write your own individual security-related vision statements.

Secretary Perry: Over the long term, we need to be heading towards the total elimination of nuclear weapons. And over the short term, we need to be taking the steps to reduce the danger that the nuclear weapons we already have could be used. This is such an important problem in my mind, that it dwarfs all other considerations. And I have, myself, decided to devote the balance of my career to working to achieve that goal.

Senator Nunn: I believe that we need a vision, a vision of a world without nuclear weapons. It's going to take a long time to get there. There are all sorts of steps that we have to take to be able to even move toward that vision where we make nuclear weapons less relevant, where we prevent their proliferation, and where we eventually end them as a threat to the world. That vision is essential to build the cooperation we need from countries around the globe in terms of taking the steps we need to prevent a nuclear nightmare. So the vision and the steps, in my view, go together.

Secretary Kissinger: We have always insisted on saying let us test each proposition and see how it actually works and see whether it can be made to work. And we have not come to a point yet where one would say it's unworkable. And that I consider great progress.

President Gorbachev: The danger is that there are still too many nuclear weapons, and we need to start getting rid of those weapons. Secondly, the longer we have nuclear weapons and not just the existence of nuclear weapons that exist today but possibly nuclear weapons in the hands of other countries, new nuclear powers, the more dangerous the situation is going to be. It's like that famous rifle on the wall, which will one day fire.

Governor Schwarzenegger: Everyone knows that I grew up in Austria. As a boy, the Red Army loomed over us from its bases in central Europe. Now, even as a child, we all knew about the threat of nuclear weapons and nuclear war. We knew the blinding power of its flash. We knew the shape of its cloud. Over the years, the intense, glaring threat of nuclear war faded. All of a sudden, we didn't think about this anymore as a major concern that people always had through the Cold War. But the reality is that the nuclear threat has returned with vengeance, the vengeance of a terrorist. See, there's a whole new world now since 9/11. The Soviets had nuclear weapons and did not use them. Today... let's be honest, is there any doubt whether terrorists would use them?

Senator McCain: We should stop and think for a moment, not only the perils of a world awash with nuclear weapons but also of the more hopeful alternative, a world in which there are far fewer such weapons than there are today; and in which proliferation, instability, and nuclear terrorism are far less likely. A quarter century ago, Ronald Reagan declared, "Our dream is to see the day when nuclear weapons will be banished from the earth." That was my dream too.

Secretary Shultz: A man named Max Kampelman, who had been my counselor when I was Secretary of State, made an eloquent statement emphasizing the importance of talking about what ought to be. If you are constantly mired in what is and you never look at what ought to be, you're never going to really get anywhere. And he used the Declaration of Independence as an example. "All men are created equal" in 1776. Are you kidding? We had slaves, women couldn't vote, you had to have property in order to vote. We had the "ought" up there and gradually over time, often with a lot of pain and agony and difficulty, but gradually, the "is" has come closer to the "ought." And we ought to have a world free of nuclear weapons.

ACTIVITY NINE: TAKING ACTION

Nuclear Tipping Point was produced to raise awareness about nuclear threats and to help build support for the urgent actions needed to reduce nuclear dangers. You can take action to inform and educate government leaders, the media, your friends, and family.

Design a poster or website that illustrates and describes what you can do at your school to raise awareness about nuclear threats and to help build support for the urgent actions needed to reduce nuclear dangers. Make sure that you consider the “Steps to a Safer World” that were mentioned in the film. These steps are listed on the next page.

In your design, you might consider using some symbols of peace that were shown or mentioned in the film, e.g., sunflowers, plowshares, mountaintop. You might consider some of the following quotes from *Nuclear Tipping Point* as well.

Narrator: The danger is not simply more nations with nuclear weapons but that material to make a bomb is scattered around the world—a lot of potential sources for terrorists.

Secretary Perry: No terror group that we are aware of, even if they are well-financed and well-organized, can build a nuclear weapon from scratch. But if they got the fissile materials through another nation, either by buying or stealing it... then it's not simple to build a nuclear weapon, but it is feasible.

Senator Nunn: We know several things. We know that the know-how in terms of how to make a crude weapon has exploded over the last 10, 15 years. So the availability of information about the science required to make a weapon is out there now—not a piece of cake, but doable. The second thing we know is the nuclear material, highly enriched uranium and plutonium, is spread all over the world and without the material, you can't make a weapon. The third thing we know is the terrorists groups like Al-Qaeda but not limited to Al-Qaeda, are seeking this nuclear material and would like to make weapons. They have said so, and I believe them.

STEPS TO A SAFER WORLD

Without the bold vision, the actions will not be perceived as fair or urgent. Without the actions, the vision will not be perceived as realistic or possible. Practical measures that would reduce nuclear dangers and put us on a path to a world free of nuclear weapons include:

1. Changing the Cold War posture of deployed nuclear weapons to increase warning time and thereby reduce the danger of accidental or unauthorized use of a nuclear weapon.
2. Continuing to reduce substantially the size of nuclear forces in all states that possess them.
3. Eliminating short-range nuclear weapons designed to be forward-deployed.
4. Initiating a bipartisan process with the Senate, including understandings to increase confidence and provide for periodic review, to achieve ratification of the Comprehensive Test Ban Treaty, taking advantage of recent technical advances, and working to secure ratification of other key states.
5. Providing the highest possible standards of security for all stocks of weapons, weapons-usable plutonium, and highly enriched uranium everywhere in the world.
6. Getting control of the uranium enrichment process, combined with the guarantee that uranium for nuclear power reactors could be obtained at a reasonable price, first from the Nuclear Suppliers Group and then from the International Atomic Energy Agency (IAEA) or other controlled international reserves. It will also be necessary to deal with proliferation issues presented by spent fuel from reactors producing electricity.
7. Halting the production of fissile material for weapons globally; phasing out the use of highly enriched uranium in civil commerce and removing weapons-usable uranium from research facilities around the world and rendering the materials safe.
8. Redoubling our efforts to resolve regional confrontations and conflicts that give rise to new nuclear powers.
9. Ensuring that we have effective means to verify compliance with nuclear commitments and to counter nuclear-related conduct that is potentially threatening to the security for any state or peoples.
10. Intensive work with leaders of the countries in possession of nuclear weapons to turn the goal of a world without nuclear weapons into a joint enterprise.

**FINAL PROJECT:
FILM REVIEWS**

The following are excerpts of reviews of *Nuclear Tipping Point*. Review them and write your own one-page review of the film. Your review should aim to concisely describe the content and nature of the film and analyze the techniques the producers used to communicate this content. Also, your review should include some aspect of your small-group work. Finally, your review should judge the film's effectiveness in communicating its points and give the reader advice on whether or not it is worthwhile to see.

"It's a scary movie, befitting a scary notion: What if crazed, suicidal zealots got their hands on a 'loose nuke,'...or acquired fissile materials from a rogue state and learned how to make a weapon? How would a nation retaliate against terrorists with, as Nunn puts it, 'no return address'..."

—LLOYD GROVE, *THE DAILY BEAST*, APRIL 12, 2010

"The most effective part of the film, and its purpose, are a series of simple interviews against a black backdrop in front of the camera with the four men, all deeply involved in nuclear-weapons policy and arms control...These are the words of men who lived with the Cold War that began in Oppenheimer's day. Today, they are all in the twilight of their careers, no longer in public office....For now, they are sober and realistic in talking about the future, and we ought to listen to them carefully."

—DAVID HOFFMAN, *FOREIGN POLICY MAGAZINE*, MAY 20, 2010

"In the realm of nuclear menace, the world is no longer playing by the rules (such as they were) of the Cold War. And if anybody understands that better than a group of veteran Cold Warriors, we haven't yet heard from them."

—DUSTY NIX, *COLUMBUS LEDGER-ENQUIRER* (GEORGIA), JULY 14, 2010

"What the documentary does best is convey a sense of urgency—the difference, as Nunn says, between cooperation and catastrophe. Although the calls for nonproliferation and the goal of no nukes have gained bipartisan support, the endorsement of President Obama, and the backing of the U.N. Security Council, what the documentary calls for is something akin to the No Nukes atmosphere of the 1980s, when Ronald Reagan and Mikhail Gorbachev nearly agreed to eliminate their stockpiles."

—TED JOHNSON, *VARIETY*, JANUARY 31, 2010

REMARKS BY U.S. PRESIDENT BARACK OBAMA

THE WHITE HOUSE

Office of the Press Secretary

FOR IMMEDIATE RELEASE

April 5, 2009

Hradcany Square

Prague, Czech Republic

10:21 A.M. (Local)

PRESIDENT OBAMA: Thank you so much. Thank you for this wonderful welcome. Thank you to the people of Prague. Thank you to the people of the Czech Republic. (Applause.) Today, I'm proud to stand here with you in the middle of this great city, in the center of Europe. (Applause.) And, to paraphrase one of my predecessors, I am also proud to be the man who brought Michelle Obama to Prague. (Applause.)

To Mr. President, Mr. Prime Minister, to all the dignitaries who are here, thank you for your extraordinary hospitality. And to the people of the Czech Republic, thank you for your friendship to the United States. (Applause.) I've learned over many years to appreciate the good company and the good humor of the Czech people in my hometown of Chicago. (Applause.) Behind me is a statue of a hero of the Czech people—Tomas Masaryk. (Applause.) In 1918, after America had pledged its support for Czech independence, Masaryk spoke to a crowd in Chicago that was estimated to be over 100,000. I don't think I can match his record—(laughter)—but I am honored to follow his footsteps from Chicago to Prague. (Applause.)

For over a thousand years, Prague has set itself apart from any other city in any other place. You've known war and peace. You've seen empires rise and fall. You've led revolutions in the arts and science, in politics and in poetry. Through it all, the people of Prague have insisted on pursuing their own path, and defining their own destiny. And this city—this Golden City which is both ancient and youthful—stands as a living monument to your unconquerable spirit.

When I was born, the world was divided, and our nations were faced with very different circumstances. Few people would have predicted that someone like me would one day

become the President of the United States. (Applause.) Few people would have predicted that an American President would one day be permitted to speak to an audience like this in Prague. (Applause.) Few would have imagined that the Czech Republic would become a free nation, a member of NATO, a leader of a united Europe. Those ideas would have been dismissed as dreams.

We are here today because enough people ignored the voices who told them that the world could not change.

We're here today because of the courage of those who stood up and took risks to say that freedom is a right for all people, no matter what side of a wall they live on, and no matter what they look like.

We are here today because of the Prague Spring—because the simple and principled pursuit of liberty and opportunity shamed those who relied on the power of tanks and arms to put down the will of a people.

We are here today because 20 years ago, the people of this city took to the streets to claim the promise of a new day, and the fundamental human rights that had been denied them for far too long. Sametová Revoluce—(applause)—the Velvet Revolution taught us many things. It showed us that peaceful protest could shake the foundations of an empire, and expose the emptiness of an ideology. It showed us that small countries can play a pivotal role in world events, and that young people can lead the way in overcoming old conflicts. (Applause.) And it proved that moral leadership is more powerful than any weapon.

That's why I'm speaking to you in the center of a Europe that is peaceful, united and free—because ordinary people believed that divisions could be bridged, even when their leaders did not. They believed that walls could come down; that peace could prevail.

We are here today because Americans and Czechs believed against all odds that today could be possible. (Applause.)

Now, we share this common history. But now this generation—our generation—cannot stand still. We, too, have a choice to make. As the world has become less divided, it has become more interconnected. And we've seen events move faster than our ability to control them—a global economy in crisis, a changing climate, the persistent

dangers of old conflicts, new threats and the spread of catastrophic weapons.

None of these challenges can be solved quickly or easily. But all of them demand that we listen to one another and work together; that we focus on our common interests, not on occasional differences; and that we reaffirm our shared values, which are stronger than any force that could drive us apart. That is the work that we must carry on. That is the work that I have come to Europe to begin. (Applause.)

To renew our prosperity, we need action coordinated across borders. That means investments to create new jobs. That means resisting the walls of protectionism that stand in the way of growth. That means a change in our financial system, with new rules to prevent abuse and future crisis. (Applause.)

And we have an obligation to our common prosperity and our common humanity to extend a hand to those emerging markets and impoverished people who are suffering the most, even though they may have had very little to do with financial crises, which is why we set aside over a trillion dollars for the International Monetary Fund earlier this week, to make sure that everybody—everybody—receives some assistance. (Applause.)

Now, to protect our planet, now is the time to change the way that we use energy. (Applause.) Together, we must confront climate change by ending the world's dependence on fossil fuels, by tapping the power of new sources of energy like the wind and sun, and calling upon all nations to do their part. And I pledge to you that in this global effort, the United States is now ready to lead. (Applause.)

To provide for our common security, we must strengthen our alliance. NATO was founded 60 years ago, after Communism took over Czechoslovakia. That was when the free world learned too late that it could not afford division. So we came together to forge the strongest alliance that the world has ever known. And we should—stood shoulder to shoulder—year after year, decade after decade—until an Iron Curtain was lifted, and freedom spread like flowing water.

This marks the 10th year of NATO membership for the Czech Republic. And I know that many times in the 20th century, decisions were made without you at the table. Great powers let you down, or determined your destiny

without your voice being heard. I am here to say that the United States will never turn its back on the people of this nation. (Applause.) We are bound by shared values, shared history—(applause.) We are bound by shared values and shared history and the enduring promise of our alliance. NATO's Article V states it clearly: An attack on one is an attack on all. That is a promise for our time, and for all time.

The people of the Czech Republic kept that promise after America was attacked; thousands were killed on our soil, and NATO responded. NATO's mission in Afghanistan is fundamental to the safety of people on both sides of the Atlantic. We are targeting the same al Qaeda terrorists who have struck from New York to London, and helping the Afghan people take responsibility for their future. We are demonstrating that free nations can make common cause on behalf of our common security. And I want you to know that we honor the sacrifices of the Czech people in this endeavor, and mourn the loss of those you've lost.

But no alliance can afford to stand still. We must work together as NATO members so that we have contingency plans in place to deal with new threats, wherever they may come from. We must strengthen our cooperation with one another, and with other nations and institutions around the world, to confront dangers that recognize no borders. And we must pursue constructive relations with Russia on issues of common concern.

Now, one of those issues that I'll focus on today is fundamental to the security of our nations and to the peace of the world—that's the future of nuclear weapons in the 21st century.

The existence of thousands of nuclear weapons is the most dangerous legacy of the Cold War. No nuclear war was fought between the United States and the Soviet Union, but generations lived with the knowledge that their world could be erased in a single flash of light. Cities like Prague that existed for centuries, that embodied the beauty and the talent of so much of humanity, would have ceased to exist.

Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. More nations have acquired these weapons. Testing has continued. Black market

trade in nuclear secrets and nuclear materials abound. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. Our efforts to contain these dangers are centered on a global non-proliferation regime, but as more people and nations break the rules, we could reach the point where the center cannot hold.

Now, understand, this matters to people everywhere. One nuclear weapon exploded in one city—be it New York or Moscow, Islamabad or Mumbai, Tokyo or Tel Aviv, Paris or Prague—could kill hundreds of thousands of people. And no matter where it happens, there is no end to what the consequences might be—for our global safety, our security, our society, our economy, to our ultimate survival.

Some argue that the spread of these weapons cannot be stopped, cannot be checked—that we are destined to live in a world where more nations and more people possess the ultimate tools of destruction. Such fatalism is a deadly adversary, for if we believe that the spread of nuclear weapons is inevitable, then in some way we are admitting to ourselves that the use of nuclear weapons is inevitable.

Just as we stood for freedom in the 20th century, we must stand together for the right of people everywhere to live free from fear in the 21st century. (Applause.) And as nuclear power—as a nuclear power, as the only nuclear power to have used a nuclear weapon, the United States has a moral responsibility to act. We cannot succeed in this endeavor alone, but we can lead it, we can start it.

So today, I state clearly and with conviction America's commitment to seek the peace and security of a world without nuclear weapons. (Applause.) I'm not naive. This goal will not be reached quickly—perhaps not in my lifetime. It will take patience and persistence. But now we, too, must ignore the voices who tell us that the world cannot change. We have to insist, "Yes, we can." (Applause.)

Now, let me describe to you the trajectory we need to be on. First, the United States will take concrete steps towards a world without nuclear weapons. To put an end to Cold War thinking, we will reduce the role of nuclear weapons in our national security strategy, and urge others to do the same. Make no mistake: As long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense

to our allies—including the Czech Republic. But we will begin the work of reducing our arsenal.

To reduce our warheads and stockpiles, we will negotiate a new Strategic Arms Reduction Treaty with the Russians this year. (Applause.) President Medvedev and I began this process in London, and will seek a new agreement by the end of this year that is legally binding and sufficiently bold. And this will set the stage for further cuts, and we will seek to include all nuclear weapons states in this endeavor.

To achieve a global ban on nuclear testing, my administration will immediately and aggressively pursue U.S. ratification of the Comprehensive Test Ban Treaty. (Applause.) After more than five decades of talks, it is time for the testing of nuclear weapons to finally be banned.

And to cut off the building blocks needed for a bomb, the United States will seek a new treaty that verifiably ends the production of fissile materials intended for use in state nuclear weapons. If we are serious about stopping the spread of these weapons, then we should put an end to the dedicated production of weapons-grade materials that create them. That's the first step.

Second, together we will strengthen the Nuclear Non-Proliferation Treaty as a basis for cooperation.

The basic bargain is sound: Countries with nuclear weapons will move towards disarmament, countries without nuclear weapons will not acquire them, and all countries can access peaceful nuclear energy. To strengthen the treaty, we should embrace several principles. We need more resources and authority to strengthen international inspections. We need real and immediate consequences for countries caught breaking the rules or trying to leave the treaty without cause.

And we should build a new framework for civil nuclear cooperation, including an international fuel bank, so that countries can access peaceful power without increasing the risks of proliferation. That must be the right of every nation that renounces nuclear weapons, especially developing countries embarking on peaceful programs. And no approach will succeed if it's based on the denial of rights to nations that play by the rules. We must harness the power of nuclear energy on behalf of our efforts to combat climate change, and to advance peace opportunity for all people.

But we go forward with no illusions. Some countries will break the rules. That's why we need a structure in place that ensures when any nation does, they will face consequences.

Just this morning, we were reminded again of why we need a new and more rigorous approach to address this threat. North Korea broke the rules once again by testing a rocket that could be used for long range missiles. This provocation underscores the need for action—not just this afternoon at the U.N. Security Council, but in our determination to prevent the spread of these weapons.

Rules must be binding. Violations must be punished. Words must mean something. The world must stand together to prevent the spread of these weapons. Now is the time for a strong international response—(applause)—now is the time for a strong international response, and North Korea must know that the path to security and respect will never come through threats and illegal weapons. All nations must come together to build a stronger, global regime. And that's why we must stand shoulder to shoulder to pressure the North Koreans to change course.

Iran has yet to build a nuclear weapon. My administration will seek engagement with Iran based on mutual interests and mutual respect. We believe in dialogue. (Applause.) But in that dialogue we will present a clear choice. We want Iran to take its rightful place in the community of nations, politically and economically. We will support Iran's right to peaceful nuclear energy with rigorous inspections. That's a path that the Islamic Republic can take. Or the government can choose increased isolation, international pressure, and a potential nuclear arms race in the region that will increase insecurity for all.

So let me be clear: Iran's nuclear and ballistic missile activity poses a real threat, not just to the United States, but to Iran's neighbors and our allies. The Czech Republic and Poland have been courageous in agreeing to host a defense against these missiles. As long as the threat from Iran persists, we will go forward with a missile defense system that is cost-effective and proven. (Applause.) If the Iranian threat is eliminated, we will have a stronger basis for security, and the driving force for missile defense construction in Europe will be removed. (Applause.)

So, finally, we must ensure that terrorists never acquire a nuclear weapon. This is the most immediate and extreme

threat to global security. One terrorist with one nuclear weapon could unleash massive destruction. Al Qaeda has said it seeks a bomb and that it would have no problem with using it. And we know that there is unsecured nuclear material across the globe. To protect our people, we must act with a sense of purpose without delay.

So today I am announcing a new international effort to secure all vulnerable nuclear material around the world within four years. We will set new standards, expand our cooperation with Russia, pursue new partnerships to lock down these sensitive materials.

We must also build on our efforts to break up black markets, detect and intercept materials in transit, and use financial tools to disrupt this dangerous trade. Because this threat will be lasting, we should come together to turn efforts such as the Proliferation Security Initiative and the Global Initiative to Combat Nuclear Terrorism into durable international institutions. And we should start by having a Global Summit on Nuclear Security that the United States will host within the next year. (Applause.)

Now, I know that there are some who will question whether we can act on such a broad agenda. There are those who doubt whether true international cooperation is possible, given inevitable differences among nations. And there are those who hear talk of a world without nuclear weapons and doubt whether it's worth setting a goal that seems impossible to achieve.

But make no mistake: We know where that road leads. When nations and peoples allow themselves to be defined by their differences, the gulf between them widens. When we fail to pursue peace, then it stays forever beyond our grasp. We know the path when we choose fear over hope. To denounce or shrug off a call for cooperation is an easy but also a cowardly thing to do. That's how wars begin. That's where human progress ends.

There is violence and injustice in our world that must be confronted. We must confront it not by splitting apart but by standing together as free nations, as free people. (Applause.) I know that a call to arms can stir the souls of men and women more than a call to lay them down. But that is why the voices for peace and progress must be raised together. (Applause.)

Those are the voices that still echo through the streets of Prague. Those are the ghosts of 1968. Those were the joyful sounds of the Velvet Revolution. Those were the Czechs who helped bring down a nuclear-armed empire without firing a shot.

Human destiny will be what we make of it. And here in Prague, let us honor our past by reaching for a better future. Let us bridge our divisions, build upon our hopes, accept our responsibility to leave this world more prosperous and more peaceful than we found it. (Applause.) Together we can do it.

Thank you very much. Thank you, Prague. (Applause.)

END

10:49 A.M. (Local)

A WORLD FREE OF NUCLEAR WEAPONS

By George P. Shultz, William J. Perry, Henry A. Kissinger,
and Sam Nunn

The Wall Street Journal
January 4, 2007

Nuclear weapons today present tremendous dangers, but also an historic opportunity. U.S. leadership will be required to take the world to the next stage—to a solid consensus for reversing reliance on nuclear weapons globally as a vital contribution to preventing their proliferation into potentially dangerous hands, and ultimately ending them as a threat to the world.

Nuclear weapons were essential to maintaining international security during the Cold War because they were a means of deterrence. The end of the Cold War made the doctrine of mutual Soviet-American deterrence obsolete. Deterrence continues to be a relevant consideration for many states with regard to threats from other states. But reliance on nuclear weapons for this purpose is becoming increasingly hazardous and decreasingly effective.

North Korea's recent nuclear test and Iran's refusal to stop its program to enrich uranium—potentially to weapons grade—highlight the fact that the world is now on the precipice of a new and dangerous nuclear era. Most alarmingly, the likelihood that non-state terrorists will get their hands on nuclear weaponry is increasing. In today's war waged on world order by terrorists, nuclear weapons are the ultimate means of mass devastation. And non-state terrorist groups with nuclear weapons are conceptually outside the bounds of a deterrent strategy and present difficult new security challenges.

Apart from the terrorist threat, unless urgent new actions are taken, the U.S. soon will be compelled to enter a new nuclear era that will be more precarious, psychologically disorienting, and economically even more costly than was Cold War deterrence. It is far from certain that we can successfully replicate the old Soviet-American "mutually assured destruction" with an increasing number of potential nuclear enemies world-wide without dramatically increasing the risk that nuclear weapons will be used. New nuclear states do not have the benefit of years of step-by-step safeguards put in effect during the Cold War to prevent

nuclear accidents, misjudgments or unauthorized launches. The United States and the Soviet Union learned from mistakes that were less than fatal. Both countries were diligent to ensure that no nuclear weapon was used during the Cold War by design or by accident. Will new nuclear nations and the world be as fortunate in the next 50 years as we were during the Cold War?

.....

Leaders addressed this issue in earlier times. In his "Atoms for Peace" address to the United Nations in 1953, Dwight D. Eisenhower pledged America's "determination to help solve the fearful atomic dilemma—to devote its entire heart and mind to find the way by which the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life." John F. Kennedy, seeking to break the logjam on nuclear disarmament, said, "The world was not meant to be a prison in which man awaits his execution."

Rajiv Gandhi, addressing the U.N. General Assembly on June 9, 1988, appealed, "Nuclear war will not mean the death of a hundred million people. Or even a thousand million. It will mean the extinction of four thousand million: the end of life as we know it on our planet earth. We come to the United Nations to seek your support. We seek your support to put a stop to this madness."

Ronald Reagan called for the abolishment of "all nuclear weapons," which he considered to be "totally irrational, totally inhumane, good for nothing but killing, possibly destructive of life on earth and civilization." Mikhail Gorbachev shared this vision, which had also been expressed by previous American presidents.

Although Reagan and Mr. Gorbachev failed at Reykjavik to achieve the goal of an agreement to get rid of all nuclear weapons, they did succeed in turning the arms race on its head. They initiated steps leading to significant reductions in deployed long- and intermediate-range nuclear forces, including the elimination of an entire class of threatening missiles.

What will it take to rekindle the vision shared by Reagan and Mr. Gorbachev? Can a world-wide consensus be forged that defines a series of practical steps leading to major reductions in the nuclear danger? There is an urgent need to address the challenge posed by these two questions.

The Non-Proliferation Treaty (NPT) envisioned the end of all nuclear weapons. It provides (a) that states that did not possess nuclear weapons as of 1967 agree not to obtain them, and (b) that states that do possess them agree to divest themselves of these weapons over time. Every president of both parties since Richard Nixon has reaffirmed these treaty obligations, but non-nuclear weapon states have grown increasingly skeptical of the sincerity of the nuclear powers.

Strong non-proliferation efforts are under way. The Cooperative Threat Reduction program, the Global Threat Reduction Initiative, the Proliferation Security Initiative and the Additional Protocols are innovative approaches that provide powerful new tools for detecting activities that violate the NPT and endanger world security. They deserve full implementation. The negotiations on proliferation of nuclear weapons by North Korea and Iran, involving all the permanent members of the Security Council plus Germany and Japan, are crucially important. They must be energetically pursued.

But by themselves, none of these steps are adequate to the danger. Reagan and General Secretary Gorbachev aspired to accomplish more at their meeting in Reykjavik 20 years ago—the elimination of nuclear weapons altogether. Their vision shocked experts in the doctrine of nuclear deterrence, but galvanized the hopes of people around the world. The leaders of the two countries with the largest arsenals of nuclear weapons discussed the abolition of their most powerful weapons.

What should be done? Can the promise of the NPT and the possibilities envisioned at Reykjavik be brought to fruition? We believe that a major effort should be launched by the United States to produce a positive answer through concrete stages.

First and foremost is intensive work with leaders of the countries in possession of nuclear weapons to turn the goal of a world without nuclear weapons into a joint enterprise. Such a joint enterprise, by involving changes in the disposition of the states possessing nuclear weapons, would lend additional weight to efforts already under way to avoid the emergence of a nuclear-armed North Korea and Iran.

The program on which agreements should be sought would constitute a series of agreed and urgent steps that would lay the groundwork for a world free of the nuclear threat. Steps would include:

- Changing the Cold War posture of deployed nuclear weapons to increase warning time and thereby reduce the danger of an accidental or unauthorized use of a nuclear weapon.
- Continuing to reduce substantially the size of nuclear forces in all states that possess them.
- Eliminating short-range nuclear weapons designed to be forward-deployed.
- Initiating a bipartisan process with the Senate, including understandings to increase confidence and provide for periodic review, to achieve ratification of the Comprehensive Test Ban Treaty, taking advantage of recent technical advances, and working to secure ratification by other key states.
- Providing the highest possible standards of security for all stocks of weapons, weapons-usable plutonium, and highly enriched uranium everywhere in the world.
- Getting control of the uranium enrichment process, combined with the guarantee that uranium for nuclear power reactors could be obtained at a reasonable price, first from the Nuclear Suppliers Group and then from the International Atomic Energy Agency (IAEA) or other controlled international reserves. It will also be necessary to deal with proliferation issues presented by spent fuel from reactors producing electricity.
- Halting the production of fissile material for weapons globally; phasing out the use of highly enriched uranium in civil commerce and removing weapons-usable uranium from research facilities around the world and rendering the materials safe.
- Redoubling our efforts to resolve regional confrontations and conflicts that give rise to new nuclear powers.
- Achieving the goal of a world free of nuclear weapons will also require effective measures to impede or counter any nuclear-related conduct that is potentially threatening to the security of any state or peoples.

Reassertion of the vision of a world free of nuclear weapons and practical measures toward achieving that goal would be, and would be perceived as, a bold initiative consistent with America's moral heritage. The effort could have a profoundly positive impact on the security of future

generations. Without the bold vision, the actions will not be perceived as fair or urgent. Without the actions, the vision will not be perceived as realistic or possible.

We endorse setting the goal of a world free of nuclear weapons and working energetically on the actions required to achieve that goal, beginning with the measures outlined above.

Mr. Shultz, a distinguished fellow at the Hoover Institution at Stanford, was secretary of state from 1982 to 1989. Mr. Perry was secretary of defense from 1994 to 1997. Mr. Kissinger, chairman of Kissinger Associates, was secretary of state from 1973 to 1977. Mr. Nunn is former chairman of the Senate Armed Services Committee.

A conference organized by Mr. Shultz and Sidney D. Drell was held at Hoover to reconsider the vision that Reagan and Mr. Gorbachev brought to Reykjavik. In addition to Messrs. Shultz and Drell, the following participants also endorse the view in this statement: Martin Anderson, Steve Andreasen, Michael Armacost, William Crowe, James Goodby, Thomas Graham Jr., Thomas Henriksen, David Holloway, Max Kampelman, Jack Matlock, John McLaughlin, Don Oberdorfer, Rozanne Ridgway, Henry Rowen, Roald Sagdeev and Abraham Sofaer.

TOWARD A NUCLEAR-FREE WORLD

By George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn

Full list of signatories at end of article.

The Wall Street Journal

January 15, 2008

The accelerating spread of nuclear weapons, nuclear know-how and nuclear material has brought us to a nuclear tipping point. We face a very real possibility that the deadliest weapons ever invented could fall into dangerous hands.

The steps we are taking now to address these threats are not adequate to the danger. With nuclear weapons more widely available, deterrence is decreasingly effective and increasingly hazardous.

One year ago, in an essay in this paper, we called for a global effort to reduce reliance on nuclear weapons, to prevent their spread into potentially dangerous hands, and ultimately to end them as a threat to the world. The interest, momentum and growing political space that has been created to address these issues over the past year has been extraordinary, with strong positive responses from people all over the world.

Mikhail Gorbachev wrote in January 2007 that, as someone who signed the first treaties on real reductions in nuclear weapons, he thought it his duty to support our call for urgent action: "It is becoming clearer that nuclear weapons are no longer a means of achieving security; in fact, with every passing year they make our security more precarious."

In June, the United Kingdom's foreign secretary, Margaret Beckett, signaled her government's support, stating: "What we need is both a vision—a scenario for a world free of nuclear weapons—and action—progressive steps to reduce warhead numbers and to limit the role of nuclear weapons in security policy. These two strands are separate but they are mutually reinforcing. Both are necessary, but at the moment too weak."

We have also been encouraged by additional indications of general support for this project from other former U.S. officials with extensive experience as secretaries of state

and defense and national security advisors. These include: Madeleine Albright, Richard V. Allen, James A. Baker III, Samuel R. Berger, Zbigniew Brzezinski, Frank Carlucci, Warren Christopher, William Cohen, Lawrence Eagleburger, Melvin Laird, Anthony Lake, Robert McFarlane, Robert McNamara and Colin Powell.

Inspired by this reaction, in October 2007, we convened veterans of the past six administrations, along with a number of other experts on nuclear issues, for a conference at Stanford University's Hoover Institution. There was general agreement about the importance of the vision of a world free of nuclear weapons as a guide to our thinking about nuclear policies, and about the importance of a series of steps that will pull us back from the nuclear precipice.

The U.S. and Russia, which possess close to 95% of the world's nuclear warheads, have a special responsibility, obligation and experience to demonstrate leadership, but other nations must join.

Some steps are already in progress, such as the ongoing reductions in the number of nuclear warheads deployed on long-range, or strategic, bombers and missiles. Other near-term steps that the U.S. and Russia could take, beginning in 2008, can in and of themselves dramatically reduce nuclear dangers. They include:

- Extend key provisions of the Strategic Arms Reduction Treaty of 1991. Much has been learned about the vital task of verification from the application of these provisions. The treaty is scheduled to expire on Dec. 5, 2009. The key provisions of this treaty, including their essential monitoring and verification requirements, should be extended, and the further reductions agreed upon in the 2002 Moscow Treaty on Strategic Offensive Reductions should be completed as soon as possible.
- Take steps to increase the warning and decision times for the launch of all nuclear-armed ballistic missiles, thereby reducing risks of accidental or unauthorized attacks. Reliance on launch procedures that deny command authorities sufficient time to make careful and prudent decisions is unnecessary and dangerous in today's environment. Furthermore, developments in cyber-warfare pose new threats that could have disastrous consequences if the command-and-control systems of any nuclear-weapons state were

compromised by mischievous or hostile hackers. Further steps could be implemented in time, as trust grows in the U.S.-Russian relationship, by introducing mutually agreed and verified physical barriers in the command-and-control sequence.

- Discard any existing operational plans for massive attacks that still remain from the Cold War days. Interpreting deterrence as requiring mutual assured destruction (MAD) is an obsolete policy in today's world, with the U.S. and Russia formally having declared that they are allied against terrorism and no longer perceive each other as enemies.
- Undertake negotiations toward developing cooperative multilateral ballistic-missile defense and early warning systems, as proposed by Presidents Bush and Putin at their 2002 Moscow summit meeting. This should include agreement on plans for countering missile threats to Europe, Russia and the U.S. from the Middle East, along with completion of work to establish the Joint Data Exchange Center in Moscow. Reducing tensions over missile defense will enhance the possibility of progress on the broader range of nuclear issues so essential to our security. Failure to do so will make broader nuclear cooperation much more difficult.
- Dramatically accelerate work to provide the highest possible standards of security for nuclear weapons, as well as for nuclear materials everywhere in the world, to prevent terrorists from acquiring a nuclear bomb. There are nuclear weapons materials in more than 40 countries around the world, and there are recent reports of alleged attempts to smuggle nuclear material in Eastern Europe and the Caucasus. The U.S., Russia and other nations that have worked with the Nunn-Lugar programs, in cooperation with the International Atomic Energy Agency (IAEA), should play a key role in helping to implement United Nations Security Council Resolution 1540 relating to improving nuclear security—by offering teams to assist jointly any nation in meeting its obligations under this resolution to provide for appropriate, effective security of these materials.

As Gov. Arnold Schwarzenegger put it in his address at our October conference, "Mistakes are made in every other human endeavor. Why should nuclear weapons be exempt?" To underline the governor's point, on Aug. 29–30, 2007, six cruise missiles armed with nuclear warheads were loaded on a U.S. Air Force plane, flown across the country

and unloaded. For 36 hours, no one knew where the warheads were, or even that they were missing.

Start a dialogue, including within NATO and with Russia, on consolidating the nuclear weapons designed for forward deployment to enhance their security, and as a first step toward careful accounting for them and their eventual elimination. These smaller and more portable nuclear weapons are, given their characteristics, inviting acquisition targets for terrorist groups.

Strengthen the means of monitoring compliance with the nuclear Non-Proliferation Treaty (NPT) as a counter to the global spread of advanced technologies. More progress in this direction is urgent, and could be achieved through requiring the application of monitoring provisions (Additional Protocols) designed by the IAEA to all signatories of the NPT.

Adopt a process for bringing the Comprehensive Test Ban Treaty (CTBT) into effect, which would strengthen the NPT and aid international monitoring of nuclear activities. This calls for a bipartisan review, first, to examine improvements over the past decade of the international monitoring system to identify and locate explosive underground nuclear tests in violation of the CTBT; and, second, to assess the technical progress made over the past decade in maintaining high confidence in the reliability, safety and effectiveness of the nation's nuclear arsenal under a test ban. The Comprehensive Test Ban Treaty Organization is putting in place new monitoring stations to detect nuclear tests—an effort the U.S. should urgently support even prior to ratification.

In parallel with these steps by the U.S. and Russia, the dialogue must broaden on an international scale, including non-nuclear as well as nuclear nations.

Key subjects include turning the goal of a world without nuclear weapons into a practical enterprise among nations, by applying the necessary political will to build an international consensus on priorities. The government of Norway will sponsor a conference in February that will contribute to this process.

Another subject: Developing an international system to manage the risks of the nuclear fuel cycle. With the growing global interest in developing nuclear energy and the

potential proliferation of nuclear enrichment capabilities, an international program should be created by advanced nuclear countries and a strengthened IAEA. The purpose should be to provide for reliable supplies of nuclear fuel, reserves of enriched uranium, infrastructure assistance, financing, and spent fuel management—to ensure that the means to make nuclear weapons materials isn't spread around the globe.

There should also be an agreement to undertake further substantial reductions in U.S. and Russian nuclear forces beyond those recorded in the U.S.-Russia Strategic Offensive Reductions Treaty. As the reductions proceed, other nuclear nations would become involved.

President Reagan's maxim of "trust but verify" should be reaffirmed. Completing a verifiable treaty to prevent nations from producing nuclear materials for weapons would contribute to a more rigorous system of accounting and security for nuclear materials.

We should also build an international consensus on ways to deter or, when required, to respond to, secret attempts by countries to break out of agreements.

Progress must be facilitated by a clear statement of our ultimate goal. Indeed, this is the only way to build the kind of international trust and broad cooperation that will be required to effectively address today's threats. Without the vision of moving toward zero, we will not find the essential cooperation required to stop our downward spiral.

In some respects, the goal of a world free of nuclear weapons is like the top of a very tall mountain. From the vantage point of our troubled world today, we can't even see the top of the mountain, and it is tempting and easy to say we can't get there from here. But the risks from continuing to go down the mountain or standing pat are too real to ignore. We must chart a course to higher ground where the mountaintop becomes more visible.

Mr. Shultz was secretary of state from 1982 to 1989. Mr. Perry was secretary of defense from 1994 to 1997. Mr. Kissinger was secretary of state from 1973 to 1977. Mr. Nunn is former chairman of the Senate Armed Services Committee.

The following participants in the Hoover-NTI conference also endorse the view in this statement: General John Abizaid, Graham Allison, Brooke Anderson, Martin Anderson, Steve Andreasen, Mike Armacost, Bruce Blair, Matt Bunn, Ashton Carter, Sidney Drell, General Vladimir Dvorkin, Bob Einhorn, Mark Fitzpatrick, James Goodby, Rose Gottemoeller, Tom Graham, David Hamburg, Siegfried Hecker, Tom Henriksen, David Holloway, Raymond Jeanloz, Ray Juzaitis, Max Kampelman, Jack Matlock, Michael McFaul, John McLaughlin, Don Oberdorfer, Pavel Podvig, William Potter, Richard Rhodes, Joan Rohlfing, Harry Rowen, Scott Sagan, Roald Sagdeev, Abe Sofaer, Richard Solomon, and Philip Zelikow.

**STEPS TO A
SAFER WORLD
NUCLEAR SECURITY
PROJECT**

Without the bold vision, the actions will not be perceived as fair or urgent. Without the actions, the vision will not be perceived as realistic or possible. Practical measures would reduce nuclear dangers and put us on a path to a world free of nuclear weapons.

1. Changing the Cold War posture of deployed nuclear weapons to increase warning time and thereby reduce the danger of accidental or unauthorized use of a nuclear weapon.
2. Continuing to reduce substantially the size of nuclear forces in all states that possess them.
3. Eliminating short-range nuclear weapons designed to be forward-deployed.
4. Initiating a bipartisan process with the Senate, including understandings to increase confidence and provide for periodic review, to achieve ratification of the Comprehensive Test Ban Treaty, taking advantage of recent technical advances, and working to secure ratification of other key states.
5. Providing the highest possible standards of security for all stocks of weapons, weapons-usable plutonium, and highly enriched uranium everywhere in the world.
6. Getting control of the uranium enrichment process, combined with the guarantee that uranium for nuclear power reactors could be obtained at a reasonable price, first from the Nuclear Suppliers Group and then from the International Atomic Energy Agency (IAEA) or other controlled international reserves. It will also be necessary to deal with proliferation issues presented by spent fuel from reactors producing electricity.
7. Halting the production of fissile material for weapons globally, phasing out the use of highly enriched uranium in civil commerce, and removing weapons-usable uranium from research facilities around the world and rendering the materials safe.
8. Redoubling our efforts to resolve regional confrontations and conflicts that give rise to new nuclear powers.
9. Ensuring that we have effective means to verify compliance with nuclear commitments and to counter nuclear-related conduct that is potentially threatening to the security for any state or peoples.
10. Intensive work with leaders of the countries in possession of nuclear weapons to turn the goal of a world without nuclear weapons into a joint enterprise.

SOURCES

- Blacker, Coit. (1993). *Hostage to Revolution: Gorbachev and Soviet Security Policy, 1985–91*. New York: Council on Foreign Relations.
- Carter, Ashton B., May, Michael M., and Perry, William J. (2007). *The Day After: Action in the 24 Hours Following a Nuclear Blast*. Report, The Preventive Defense Project, Harvard and Stanford Universities.
- Carter, Ashton B., and Perry, William J. (1999). *Preventive Defense: A New Security Strategy for America*. Washington, DC: The Brookings Institution.
- Gorbachev, Mikhail. (1996). *Memoirs*. New York: Doubleday.
- Holloway, David. (1994). *Stalin and the Bomb: The Soviet Union and Atomic Energy, 1939–1956*. New Haven, CT: Yale University Press.
- Kissinger, Henry. (1999). *Years of Renewal*. New York: Touchstone.
- Kissinger, Henry. (1982). *Years of Upheaval*. Boston: Little, Brown.
- Kissinger, Henry. (1979). *White House Years*. Boston: Little, Brown.
- National Council for the Social Studies. (2010). "NCSS Position Statement on Media Literacy," www.socialstudies.org/positions/medialiteracy, accessed December 18, 2010.
- Ogle, Donna, Klemp, Ron M., and McBride, Bill. (2007). *Building Literacy in Social Studies: Strategies for Improving Comprehension and Critical Thinking*. Alexandria, VA: ASCD, Association for Supervision and Curriculum Development.
- Powell, Colin. (1995). *My American Journey*. New York: Random House.
- Rios, Delia M. "Memorials, Like Memory Itself, Can Be Complex," *San Jose Mercury News*, May 30, 2004, p. 3B.
- Sagan, Scott, and Waltz, Kenneth N. (1995). *The Spread of Nuclear Weapons: A Debate*. New York: W.W. Norton.
- Shultz, George P. (1993). *Turmoil and Triumph: My Years as Secretary of State*. New York: C. Scribner's Sons.
- Shultz, George P., Perry, William J., Kissinger Henry A., and Nunn, Sam. "A World Free of Nuclear Weapons," *The Wall Street Journal*, January 4, 2007, A15.
- Shultz, George P., Perry, William J., Kissinger Henry A., and Nunn, Sam. "Toward a Nuclear-Free World," *The Wall Street Journal*, January 15, 2008, A13.
- Soares, Lina B., and Wood, Karen. (2010). "A Critical Literacy Perspective for Teaching and Learning Social Studies." *The Reading Teacher* 60(6), 486–94.
- Wilson, Elizabeth K., Wright, Vivian H., and Peirano, Ann-Marie. (2007). "The Impact of Using Digital Timelines in the Social Studies Classroom." *Social Studies Research and Practice* 2(2), 169–79.
- Wineburg, Sam, and Martin, Daisy. (2004). "Reading and Rewriting History." *Educational Leadership* 62(1), 42–5.
- Wolk, Steven. (2003). "Teaching for Critical Literacy in Social Studies." *The Social Studies* (May/June), 101–6.



**The Nuclear Threat Initiative welcomes the opportunity to see your students' work.
Send letters, photos, or feedback to nuclearsecurityproject@nti.org.**



One of the world's most daunting problems is the presence of nuclear weapons in many countries of the world.

Nuclear weapons pose unequivocal threats and the call for a world without nuclear weapons provides historic opportunities for social change and global security. Scholars and analysts at the Freeman Spogli Institute for International Studies (FSI) at Stanford University and also at the Nuclear Threat Initiative (NTI) are addressing this very issue.

SPICE, an educational outreach program of FSI, has partnered with NTI in developing this teacher's guide for the film, *Nuclear Tipping Point*. The film is a conversation with four men intimately involved in American diplomacy and national security for decades. Former Secretary of State George Shultz, former Secretary of State Henry Kissinger, former Secretary of Defense Bill Perry and former Senator Sam Nunn share the personal experiences that led them to write a series of *Wall Street Journal* op-eds, in support of working toward a world without nuclear weapons and the steps needed to get there. Their efforts reframed the global debate on nuclear issues and, according to the *New York Times*, "sent waves through the global policy establishment."

The teacher's guide underscores the importance of teaching for critical literacy and addresses specific connections to the National Standards for History in the Schools. In addition, students can become part of the national conversation on these important issues. Their engagement is important and participation essential.



www.nti.org