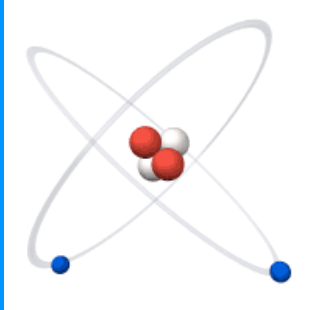


**BOMBS AWAY!**

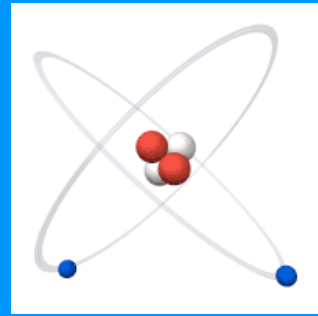
A large, glowing mushroom cloud from a nuclear explosion, with a bright yellow and orange core and a dark, billowing plume of smoke and debris rising from the ground. The background is dark, making the fireball stand out.

**NUCLEAR PROLIFERATION IN A  
GLOBAL SOCIETY!**

**FROM THE MANHATTAN PROJECT TO TODAY**

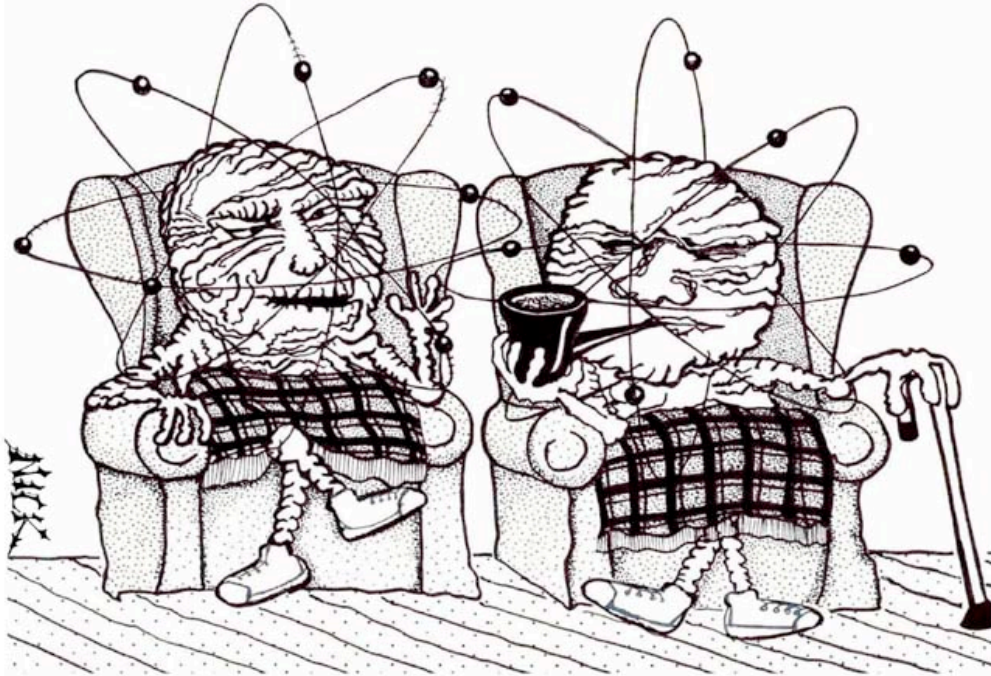


**A SOCIAL STUDIES AND SCIENCE UNIT**  
**DESIGNED BY:**  
**DOREEN ARNOLD**  
**DONNA RADLOWSKI**  
**CHRISTINE TYLUTKI**



*Source of atom: [http://www.aboutnuclear.org/view.cgi?fC=The\\_Atom](http://www.aboutnuclear.org/view.cgi?fC=The_Atom)*

At the home for old atoms...

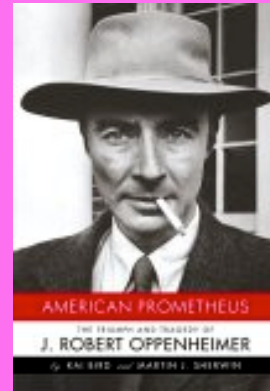
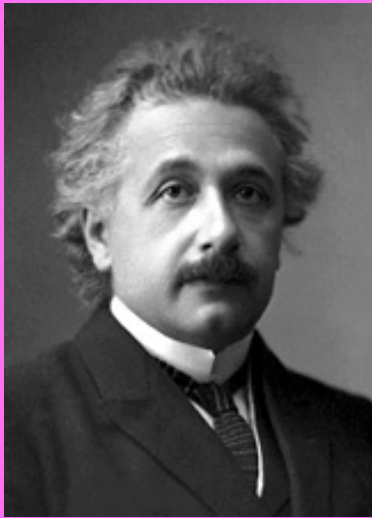


*“When I was young I used to feel so alive and dangerous! Would you believe I started life as a uranium-238? Then one day I accidentally ejected an alpha particle. Now look at me—a spent old atom of lead-206. It seems that all my life since then has been nothing but decay, decay, decay...”*

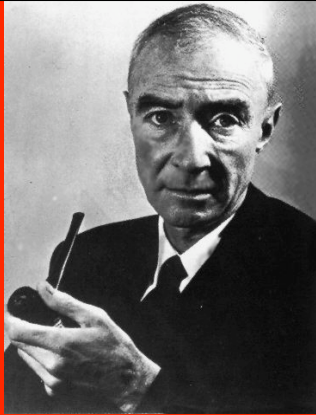
Source: [http://www.nearingzero.net/screen\\_res/nz169.jpg](http://www.nearingzero.net/screen_res/nz169.jpg)

## **ATOMIC ENERGY SCIENTISTS**

**CLICK ON THE PICTURE TO LEARN MORE ABOUT THE  
SCIENTIST**

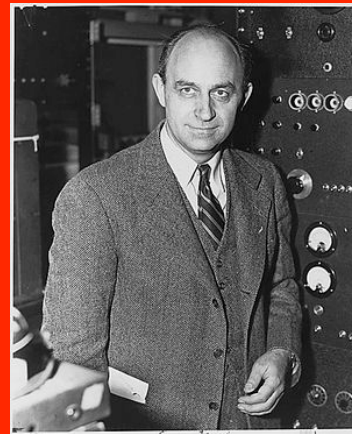
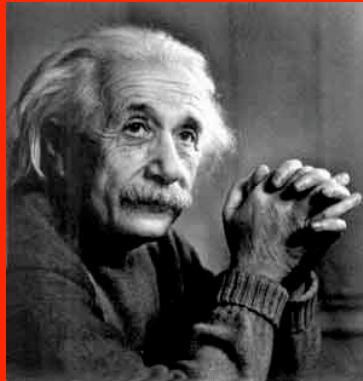


SOURCE:[http://nobelprize.org/nobel\\_prizes/physics/laureates/1921/einstein-bio.html](http://nobelprize.org/nobel_prizes/physics/laureates/1921/einstein-bio.html)  
[http://nobelprize.org/nobel\\_prizes/physics/laureates/1938/fermi-bio.html](http://nobelprize.org/nobel_prizes/physics/laureates/1938/fermi-bio.html)  
<http://www.atomicarchive.com/Bios/Oppenheimer.shtml>



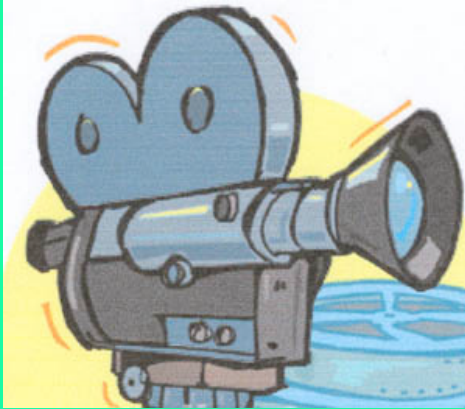
**MOVE THE SCIENTIST'S NAME TO THE  
CORRECT IMAGE:**

- **ENRICO FERMI**
- **ROBERT OPPENHEIMER**
- **ALBERT EINSTEIN**



**MOVE THE PICTURE TO CHECK**

**CLICK ON THE CAMERA ICON TO VIEW A  
SHORT FILM ON HIROSHIMA & THE ATOMIC  
BOMB**



**SOURCE:[http://www.powermediaplus.com/streaming/digitalVideoDetail.asp?videoID=26542  
&mode=browse&sections=streaming&searchFor=HIROSHIMA&type=streaming&theSubjectID=748](http://www.powermediaplus.com/streaming/digitalVideoDetail.asp?videoID=26542&mode=browse&sections=streaming&searchFor=HIROSHIMA&type=streaming&theSubjectID=748)**

**DO YOU KNOW YOUR NUCLEAR ENERGY VOCABULARY?**  
**DRAG A STAR ★ OVER THE TERMS UNRELATED TO NUCLEAR ENERGY.**

**THEN, DRAG THE MUSHROOM CLOUD TO THE TARGET TO CHECK.**

*FISHIN'*

*CALCIUM*

*URANIUM*

*RADIOACTIVE*

*REACTOR*

*RADIO WAVES*

*DEVIL'S ISLAND*

*FISSION*

*THREE MILE ISLAND*

*RETRACTOR*



Albert Einstein to Franklin D. Roosevelt, March 25, 1945.  
Miscellaneous Historical Documents Collection.

112 Mercer Street  
Princeton, New Jersey  
March 25, 1945

The Honorable Franklin Delano Roosevelt  
The President of the United States  
The White House  
Washington, D. C.

Sir:

I am writing you to introduce Dr. L. Szilard who proposes to submit to you certain considerations and recommendations. Unusual circumstances which I shall describe further below induce me to take this action in spite of the fact that I do not know the substance of the considerations and recommendations which Dr. Szilard proposes to submit to you.

In the summer of 1939 Dr. Szilard put before me his views concerning the potential importance of uranium for national defense. He was greatly disturbed by the potentialities involved and anxious that the United States Government be advised of them as soon as possible. Dr. Szilard, who is one of the discoverers of the neutron emission of uranium on which all present work on uranium is based, described to me a specific system which he devised and which he thought would make it possible to set up a chain reaction in unseparated uranium in the immediate future. Having known him for over twenty years both from his scientific work and personally, I have much confidence in his judgment and it was on the basis of his judgment as well as my own that I took the liberty to approach you in connection with this subject. You responded to my letter dated August 2, 1939 by the appointment of a committee under the chairmanship of Dr. Briggs and thus started the Government's activity in this field.

The terms of secrecy under which Dr. Szilard is working at present do not permit him to give me information about his work; however, I understand that he now is greatly concerned about the lack of adequate contact between scientists who are doing this work and those members of your Cabinet who are responsible for formulating policy. In the circumstances I consider it my duty to give Dr. Szilard this introduction and I wish to express the hope that you will be able to give his presentation of the case your personal attention.

Very truly yours,  
*A. Einstein*

B F

Who wrote this letter?

To whom?

When?

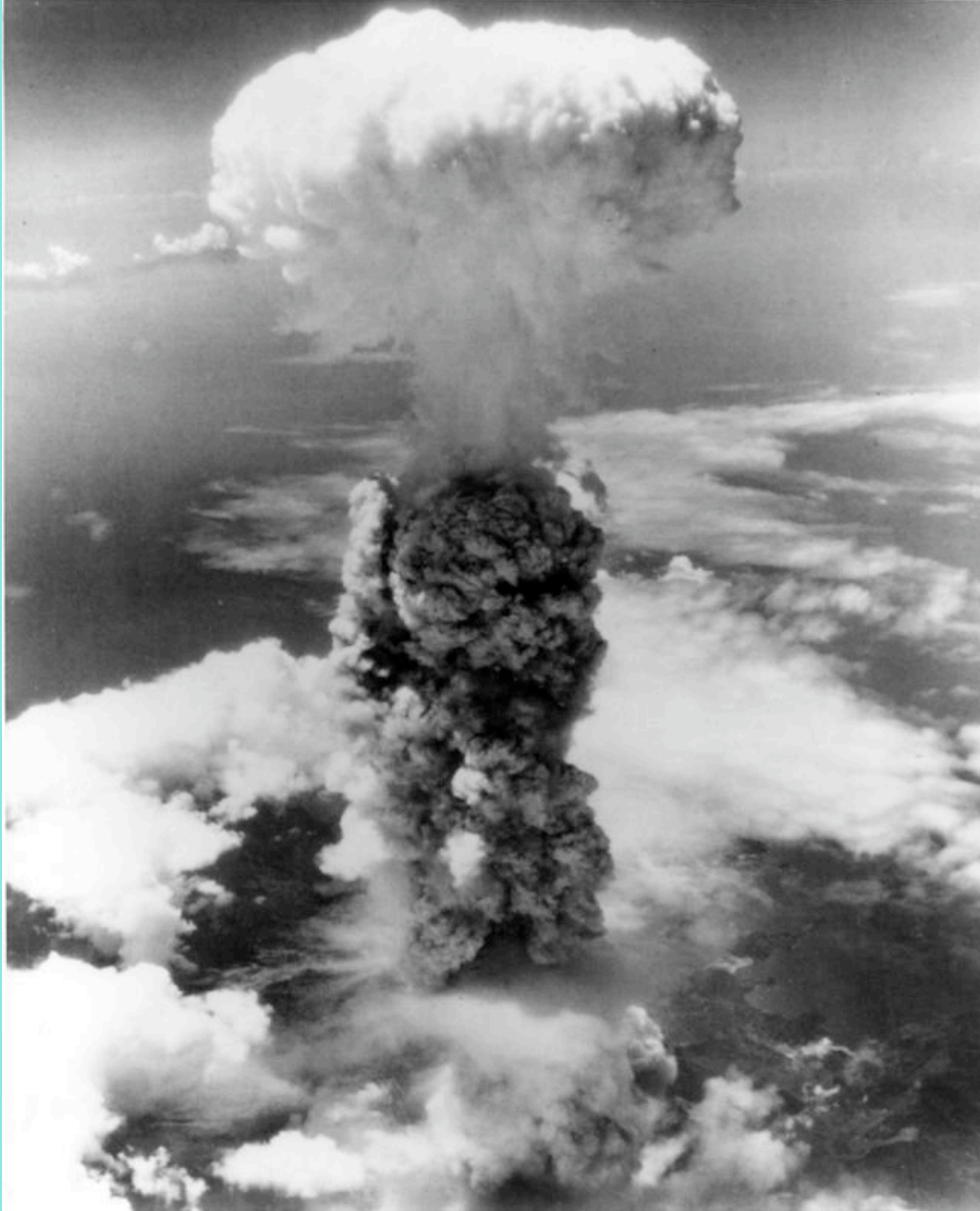
Why?

What has Dr. Szilard developed?

SOURCE:

[http://www.trumanlibrary.org/whistlestop/study\\_collections/bomb/large/index.php](http://www.trumanlibrary.org/whistlestop/study_collections/bomb/large/index.php)

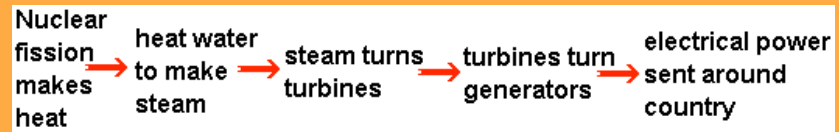
<http://www.trumanlibrary.org/photographs/displayimage.php?pointer=87>



<http://www.trumanlibrary.org/photographs/displayimage.php?pointer=21791>



# **NUCLEAR ENERGY**



Source: <http://www.darvill.clara.net/altenerg/nuclear.htm>



Source: [http://www.anl.gov/Media\\_Center/Frontiers/2003/images/d3ee2.jpg](http://www.anl.gov/Media_Center/Frontiers/2003/images/d3ee2.jpg)

## **NUCLEAR ENERGY QUIZ**

**SOURCE OF MATERIAL & QUESTIONS:** [http://www.tvakids.com/teachers/pdf/highschool\\_ch3.pdf](http://www.tvakids.com/teachers/pdf/highschool_ch3.pdf)