# Nuclear Power/IAEA Fast Facts

(CNN)Here's a look at the International Atomic Energy Agency and nuclear power.

The International Atomic Energy Agency (IAEA) inspects nuclear and related facilities under safeguard agreements. Most agreements are with countries that have committed to not possessing nuclear weapons. The IAEA is the verification authority to enforce the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

Other Facts

The IAEA has 171 member states (as of February 5, 2019).

Yukiya Amano has been the director general of the IAEA since December 1, 2009.

There are 35 member countries on the IAEA Board of Governors, which meets five times a year.

The IAEA has about 2,500 employees.

IAEA safeguard programs monitor nuclear reactors to make sure nuclear material is not being diverted for making weapons.

The IAEA sends out inspectors to monitor reactors.

The IAEA helps countries prepare and respond to emergencies.

Current status of the nuclear industry

There are 441 nuclear power reactors in operation.

There are 54 nuclear power reactors under construction.

There are 95 operational nuclear reactors in the United States.

France has a 71.7% share of nuclear power to total electricity generation, the highest percentage of nuclear energy in the world.

Timeline

1939 - Nuclear fission is discovered.

1942 - The world's first nuclear chain reaction takes place in Chicago as part of the Manhattan Project, a US research program aimed at developing the first nuclear weapons.

July 16, 1945 - The United States conducts its first nuclear weapons test in New Mexico.

August 6, 1945 - An atomic bomb is dropped on Hiroshima, Japan.

August 9, 1945 - An atomic bomb is dropped on Nagasaki, Japan.

August 29, 1949 - The Soviet Union conducts its first nuclear weapons test.

December 1951 - Electricity is first generated from a nuclear reactor at the National Reactor Testing Station in Idaho.

October 3, 1952 - The United Kingdom conducts its first nuclear weapons test.

December 8, 1953 - In a speech to the United Nations General Assembly, President Dwight D. Eisenhower asks the world's major powers to work together in developing peacetime uses of the atom. This is known as the Atoms for Peace program, and 40 countries participate. Also during this speech, Eisenhower proposes the creation of an international agency to monitor the spread of nuclear technology.

June 26, 1954 - In the Soviet Union, the first nuclear power plant is connected to an electricity grid to provide power to residences and businesses in a town near Moscow.

1957 - The IAEA is established to facilitate the peaceful use of nuclear energy.

1950's - Brazil and Argentina begin research and development of nuclear reactors.

February 13, 1960 - France conducts its first nuclear weapons test.

October 16, 1964 - China conducts its first nuclear weapons test.

March 5, 1970 - The NPT goes into effect.

May 18, 1974 - India conducts its first nuclear weapons test.

March 28, 1979 - A partial meltdown of the Three Mile Island nuclear power plant occurs in Middletown, Pennsylvania. It is determined that equipment malfunctions, design-related problems and human error led to the accident.

April 26, 1986 - Reactor number four explodes at the Chernobyl Nuclear Power Plant, releasing large amounts of radiation into the atmosphere.

September 24, 1996 - The United States, China, France, the United Kingdom, Russia and 66 other UN member countries sign the Comprehensive Nuclear Test Ban Treaty, barring the testing of nuclear weapons.

December 1997 - Mohamed ElBaradei is appointed IAEA director-general.

May 1998 - India and Pakistan test nuclear devices amid tensions between the neighboring countries.

January 10, 2003 - North Korea announces its withdrawal from the NPT.

August 2003 - IAEA inspectors find traces of highly enriched uranium at an electrical plant in Iran.

December 19, 2003 - Libya announces that it will dismantle its WMD program, in cooperation with the IAEA as well as the United States and the United Kingdom.

October 7, 2005 - The IAEA and ElBaradei are named the winners of the Nobel Peace Prize.

December 1, 2009 - Yukiya Amano replaces ElBaradei as director general of the IAEA.

March 11, 2011 - A 9.0 magnitude earthquake strikes near the coast of Honshu, Japan, creating a massive tsunami. The tsunami knocks out the Fukushima Daiichi nuclear power plant's cooling systems. The cores of three of six reactors are damaged by overheating. Resulting hydrogen explosions blow apart the buildings surrounding two reactors.

May 30, 2011 - Germany announces it will abandon the use of all nuclear power by the year 2022. This repeals a 2010 plan to extend the life of the country's nuclear reactors.

November 11, 2013 - Iran signs an agreement with the IAEA, granting inspectors access to nuclear sites.

July 14, 2015 - After 20 months of negotiations, Iran reaches a comprehensive agreement (The Joint Comprehensive Plan of Action (JCPOA)), with the United States and other countries that is aimed at reining in Iran's nuclear program. In exchange for limits on its nuclear activities, Iran will get relief from sanctions while being allowed to continue its atomic program for peaceful purposes.

August 11, 2015 - Japan restarts a nuclear reactor on the island of Kyushu. It's the country's first reactor to come back online since the 2011 tsunami.

January 16, 2016 - The IAEA confirms that Iran has taken all of the steps outlined in the nuclear deal, allowing for sanctions to be lifted, as per the agreement.

May 8, 2018 - US President Donald Trump announces that the United States will withdraw from JCPOA and will be imposing "the highest level of economic sanction" against Iran. In Tehran, Rouhani says Iran will take a few weeks to decide how to respond to the US withdrawal, but Rouhani says he had ordered the country's "atomic industry organization" to be prepared to "start our industrial enrichment without limitations."

May 8, 2019 - Rouhani announces a partial withdrawal from the JCPOA.

## Vocabulary

### Cloze Questions

##### Fill in the blanks

1: (CNN)Here's a \_\_\_\_\_\_\_\_ at the International Atomic \_\_\_\_\_\_\_\_\_\_\_\_ Agency \_\_\_\_\_\_ nuclear power.

2: \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Atomic Energy \_\_\_\_\_\_\_\_\_\_\_\_ (IAEA) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_ related \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ safeguard agreements. Most agreements \_\_\_\_\_\_ with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that have committed to not possessing nuclear weapons. \_\_\_\_\_\_ IAEA is the verification authority to enforce \_\_\_\_\_\_ Treaty on \_\_\_\_\_\_ Non-Proliferation of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Weapons (NPT).

3: The \_\_\_\_\_\_\_\_ \_\_\_\_\_\_ 171 member \_\_\_\_\_\_\_\_\_\_\_\_ (as of February 5, \_\_\_\_\_\_\_\_\_\_\_\_

4: Yukiya \_\_\_\_\_\_\_\_\_\_ has been the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ general of \_\_\_\_\_\_ IAEA since \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1, \_\_\_\_\_\_\_\_\_\_

5: There \_\_\_\_\_\_ 35 member countries on \_\_\_\_\_\_ IAEA Board \_\_\_\_ Governors, which \_\_\_\_\_\_\_\_\_\_ five \_\_\_\_\_\_\_\_\_\_ a year.

6: \_\_\_\_\_\_\_\_ safeguard programs monitor nuclear reactors \_\_\_\_ make \_\_\_\_\_\_\_\_ nuclear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is \_\_\_\_\_\_ being diverted \_\_\_\_\_\_ making weapons.

7: There \_\_\_\_\_\_ 95 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nuclear reactors in the \_\_\_\_\_\_\_\_\_\_\_\_ States.

8: \_\_\_\_\_\_\_\_\_\_\_\_ has a \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ of nuclear power \_\_\_\_ total electricity \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the highest percentage of nuclear energy \_\_\_\_ \_\_\_\_\_\_ world.

9: 1942 - The world's first nuclear chain reaction takes \_\_\_\_\_\_\_\_\_\_ \_\_\_\_ Chicago \_\_\_\_ part of the Manhattan Project, a US research \_\_\_\_\_\_\_\_\_\_\_\_\_\_ aimed \_\_\_\_ developing \_\_\_\_\_\_ first \_\_\_\_\_\_\_\_\_\_\_\_\_\_ weapons.

10: July 16, 1945 - The United States \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ weapons test \_\_\_\_ New Mexico.

11: \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_ 1945 - An atomic bomb is dropped \_\_\_\_ Hiroshima, Japan.

12: August \_\_\_\_ 1945 - \_\_\_\_ atomic \_\_\_\_\_\_\_\_ \_\_\_\_ dropped on Nagasaki, Japan.

13: August \_\_\_\_\_\_ 1949 - The \_\_\_\_\_\_\_\_\_\_\_\_ Union conducts \_\_\_\_\_\_ first nuclear \_\_\_\_\_\_\_\_\_\_\_\_\_\_ test.

14: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ - Electricity is \_\_\_\_\_\_\_\_\_\_ generated from a nuclear reactor at \_\_\_\_\_\_ National Reactor Testing Station \_\_\_\_ Idaho.

15: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3, 1952 - \_\_\_\_\_\_ United Kingdom \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ its first \_\_\_\_\_\_\_\_\_\_\_\_\_\_ weapons test.

16: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 8, 1953 - In a speech to the United Nations \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Assembly, President Dwight \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ asks \_\_\_\_\_\_ world's \_\_\_\_\_\_\_\_\_\_ powers to work together in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ uses \_\_\_\_ the atom. \_\_\_\_\_\_\_\_ is known as \_\_\_\_\_\_ Atoms for \_\_\_\_\_\_\_\_\_\_ program, and 40 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proposes the creation of \_\_\_\_ international agency to monitor the spread of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ technology.

17: June 26, 1954 - In \_\_\_\_\_\_ Soviet Union, the \_\_\_\_\_\_\_\_\_\_ nuclear power \_\_\_\_\_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_ electricity grid to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ power to residences and businesses in a \_\_\_\_\_\_\_\_ near \_\_\_\_\_\_\_\_\_\_\_\_\_\_

18: 1957 - The IAEA is established to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ use \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.

19: 1950's - Brazil and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of nuclear reactors.

20: February \_\_\_\_\_\_ 1960 - France conducts its \_\_\_\_\_\_\_\_\_\_ nuclear weapons test.

21: October 16, \_\_\_\_\_\_\_\_ - China \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ its first \_\_\_\_\_\_\_\_\_\_\_\_\_\_ weapons test.

22: March 5, 1970 - The \_\_\_\_\_\_ goes into \_\_\_\_\_\_\_\_\_\_\_\_\_\_

23: May \_\_\_\_\_\_ 1974 - \_\_\_\_\_\_\_\_\_\_ conducts its first nuclear weapons test.

24: \_\_\_\_\_\_\_\_\_\_ 28, 1979 - A partial meltdown of \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ Island nuclear power plant \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_ Middletown, Pennsylvania. \_\_\_\_ is determined that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ malfunctions, design-related problems and human error \_\_\_\_\_\_ to the accident.

25: April \_\_\_\_\_\_ 1986 - \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ explodes at \_\_\_\_\_\_ Chernobyl Nuclear Power Plant, releasing large \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of radiation \_\_\_\_\_\_\_\_ the atmosphere.

26: September 24, \_\_\_\_\_\_\_\_ - The United States, China, France, the \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Russia and \_\_\_\_ other \_\_\_\_ member countries sign the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Nuclear Test \_\_\_\_\_\_ Treaty, barring \_\_\_\_\_\_ testing of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27: December \_\_\_\_\_\_\_\_ - Mohamed ElBaradei \_\_\_\_ appointed \_\_\_\_\_\_\_\_ director-general.

28: \_\_\_\_\_\_ \_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_ Pakistan test nuclear devices amid tensions between \_\_\_\_\_\_ neighboring countries.

29: January 10, \_\_\_\_\_\_\_\_ - North Korea announces \_\_\_\_\_\_ withdrawal from \_\_\_\_\_\_ NPT.

30: August 2003 - IAEA inspectors find traces \_\_\_\_ highly enriched \_\_\_\_\_\_\_\_\_\_\_\_\_\_ at \_\_\_\_ electrical plant \_\_\_\_ Iran.

31: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 19, 2003 - Libya announces \_\_\_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ its WMD \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in cooperation with \_\_\_\_\_\_ IAEA as well \_\_\_\_ the United States and the \_\_\_\_\_\_\_\_\_\_\_\_ Kingdom.

32: October \_\_\_\_ 2005 - The IAEA and ElBaradei are named \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the \_\_\_\_\_\_\_\_\_\_ Peace Prize.

33: December 1, \_\_\_\_\_\_\_\_ - Yukiya Amano \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as director general of the IAEA.

34: March 11, \_\_\_\_\_\_\_\_ - A 9.0 magnitude earthquake strikes near \_\_\_\_\_\_ coast \_\_\_\_ Honshu, \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ tsunami. \_\_\_\_\_\_ tsunami \_\_\_\_\_\_\_\_\_\_\_\_ out the Fukushima Daiichi nuclear power \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cooling systems. The \_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_ of six reactors \_\_\_\_\_\_ damaged by overheating. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hydrogen explosions \_\_\_\_\_\_\_\_ apart the buildings \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ two reactors.

35: \_\_\_\_\_\_ \_\_\_\_\_\_ 2011 - \_\_\_\_\_\_\_\_\_\_\_\_\_\_ announces it will abandon the use \_\_\_\_ all nuclear \_\_\_\_\_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_\_ 2022. This repeals a 2010 plan to \_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_ of the country's \_\_\_\_\_\_\_\_\_\_\_\_\_\_ reactors.

36: November \_\_\_\_\_\_ 2013 - Iran signs \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inspectors access to nuclear sites.

37: \_\_\_\_\_\_\_\_ 14, 2015 - \_\_\_\_\_\_\_\_\_\_ 20 months of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ a comprehensive agreement \_\_\_\_\_\_\_\_ Joint Comprehensive Plan of \_\_\_\_\_\_\_\_\_\_\_\_ (JCPOA)), \_\_\_\_\_\_\_\_ the United \_\_\_\_\_\_\_\_\_\_\_\_ and other countries that is \_\_\_\_\_\_\_\_\_\_ \_\_\_\_ reining in Iran's nuclear program. In \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for \_\_\_\_\_\_\_\_\_\_\_\_ on its \_\_\_\_\_\_\_\_\_\_\_\_\_\_ activities, Iran \_\_\_\_\_\_\_\_ \_\_\_\_\_\_ relief from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ while being allowed to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ its \_\_\_\_\_\_\_\_\_\_\_\_ program \_\_\_\_\_\_ peaceful \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

38: August 11, 2015 - Japan restarts a nuclear reactor \_\_\_\_ the island of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ first \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to come back \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ the 2011 tsunami.

39: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 16, 2016 - \_\_\_\_\_\_ IAEA \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that Iran has \_\_\_\_\_\_\_\_\_\_ all of the \_\_\_\_\_\_\_\_\_\_ outlined \_\_\_\_ the nuclear deal, allowing for sanctions to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_ agreement.

40: May \_\_\_\_ 2018 - US President Donald Trump announces that the United States will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ and will be imposing "the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ level \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ against \_\_\_\_\_\_\_\_\_\_ In \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Rouhani \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ will \_\_\_\_\_\_\_\_ a few weeks to \_\_\_\_\_\_\_\_\_\_\_\_ how to respond to \_\_\_\_\_\_ US withdrawal, but Rouhani says he \_\_\_\_\_\_ ordered the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ "atomic industry organization" \_\_\_\_ be prepared to "start \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ enrichment \_\_\_\_\_\_\_\_\_\_\_\_\_\_ limitations."

41: May 8, 2019 - Rouhani \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a partial \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

### Discussion Questions

1: Summarise the article in your own words

2: How do you feel after reading the article?

3: Do you agree with the article's point? Why/why not?

4: Can you come up with an argument against this article's point?

5: After reading the article, is there anything you are wondering about?

6: Does the article relate to something else you read or watched recently?