

# Stop Rokkasho Reprocessing Plant! -Japanese Huge Plutonium Surplus and US-Japan Nuclear Cooperation Agreement-

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## 1. Overview of Rokkasho reprocessing plant and MOX fabrication facility

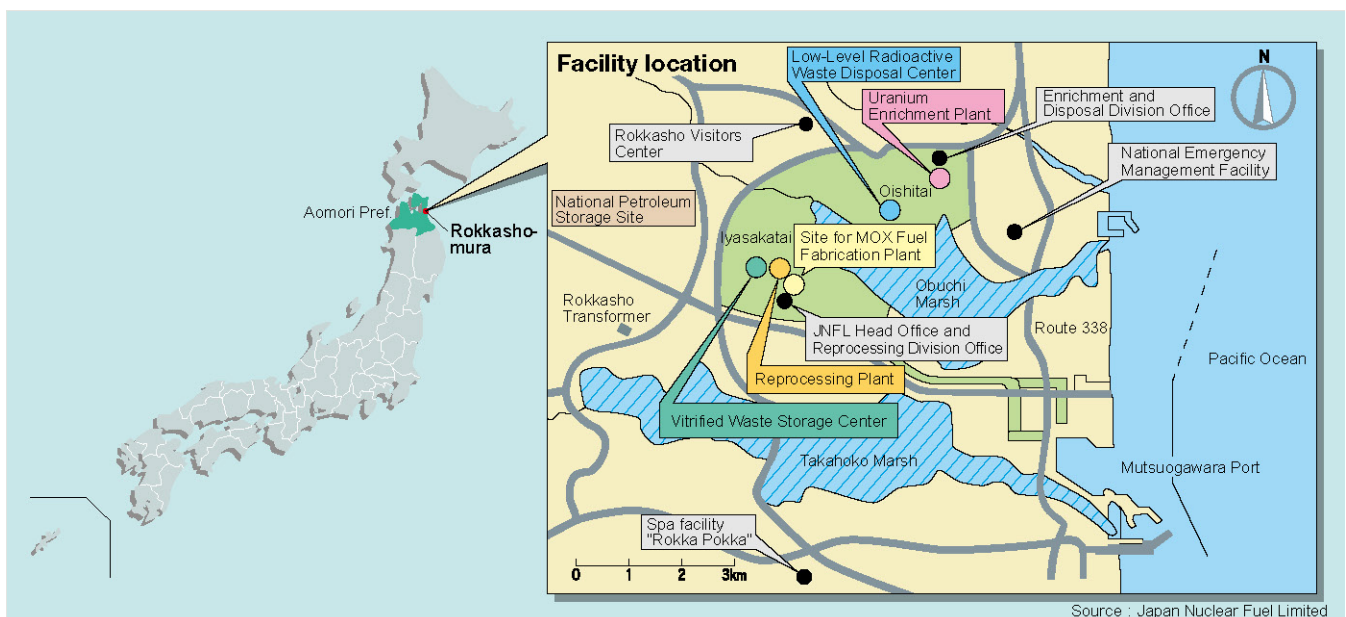
The Reprocessing Plant is a plant for recovery plutonium and uranium from spent nuclear fuel.

Since the 1950's, the Japanese government holds a long standing defunct policy so called "Closed Fuel Cycle", which is a policy to reprocess all spent nuclear fuel and use extracted plutonium as fuel.

The Rokkasho reprocessing plant is at the core of this fuel cycle policy. Based on its' owner Japan Nuclear Fuel Limited (JNFL) plan, once the plant starts operation, it will gradually increase the amount of spent nuclear fuel throughput, and from the fourth year it will process 800 tU/year<sup>1)</sup> and extract about 8 tPutot<sup>2)</sup> (about 5 tPuf<sup>3)</sup>).

The Rokkasho reprocessing plant began construction at 1993. In primary plan, construction work due to finish in 1997, but the estimated completion date was repeatedly postponed 22 times. It is still under construction and the current completion date is March 2016, according to JNFL.

The separated plutonium from the Rokkasho reprocessing plant will be used to fabricate MOX fuel at MOX fabrication facility. This facility is also under construction, and according to JNFL, the completion date is 2017. However, it is unthinkable that the construction work will be completed on time because this is the first MOX fabrication facility in Japan.



## 2. Japanese Commitment for Plutonium Surplus

How does the Japanese government plan to deal with plutonium from the Rokkasho reprocessing plant?

In 1998, the Japanese Government declared “Communication Received from Certain Member States Concerning their Policies Regarding the Management of Plutonium”. In this document, it says that “Japan has promoted the development and utilization of nuclear energy, which is strictly limited to peaceful purposes, in accordance with the Atomic Energy Basic Law. The nuclear fuel cycle is promoted based on the principle that plutonium beyond the amount required to implement the program is not to be held, i.e. the principle of no surplus plutonium. Nuclear materials are also strictly managed, so as not to give rise to any international doubts concerning nuclear proliferation. Japan intends to ensure transparency of the plutonium utilization program through these efforts.”<sup>4)</sup>

Japanese Prime Minister Shinzo Abe also declared “We will firmly maintain our policy that we should possess no plutonium reserves without specified purposes. In order to effectively carry out this policy, we do pay due consideration to the balance between supply and demand of plutonium” at The Hague Nuclear Security Summit in March 2014.<sup>5)</sup>

Therefore, the Japanese government emphasizes that Japan will limit the use of plutonium to peaceful purposes and will not possess any plutonium reserves that are not due to meet specified purposes.

## 3. Bankrupted Japanese plan for utilization of plutonium

Originally, the Japanese government intended to use separated plutonium from the Rokkasho reprocessing plant as a fuel for the Fast Breeder Reactor. However, this plan is significantly delayed. Its current plan is burn separated plutonium as a MOX fuel<sup>6)</sup> in Light Water Reactor. A MOX fuel fabrication plant for Rokkasho reprocessed plutonium is under construction, and based on JNFL announcement, due for completion in 2017.

Japan has a national policy that all spent nuclear fuel should be reprocessed.<sup>7)</sup> Therefore, the Federation of Electric Power Companies of Japan (FEPC) has formulated “Plans for the Utilization of Plutonium to be Recovered at the Rokkasho Reprocessing Plant” from 1997.<sup>8)</sup> The current “plan” which was laid down in 2010, “seeks to carry them out at 16 to 18 nuclear reactors across the country by FY 2015 at the latest when the MOX Fuel Fabrication Plant is scheduled to come on line.”, and use 5.5 – 6.5 tPuf/year. But in reality, before the 2011 Fukushima Daiichi Nuclear Disaster, 10 reactors received permission to use MOX fuel from local governments, and only 4 reactor actually burned MOX fuel.<sup>9)</sup>

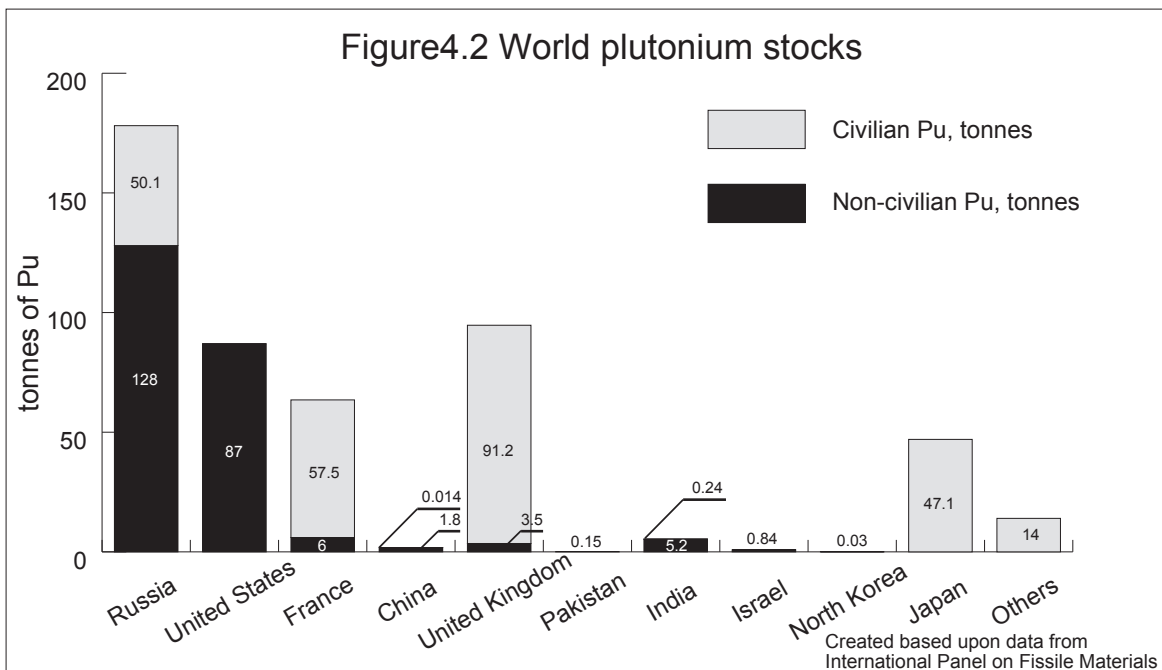
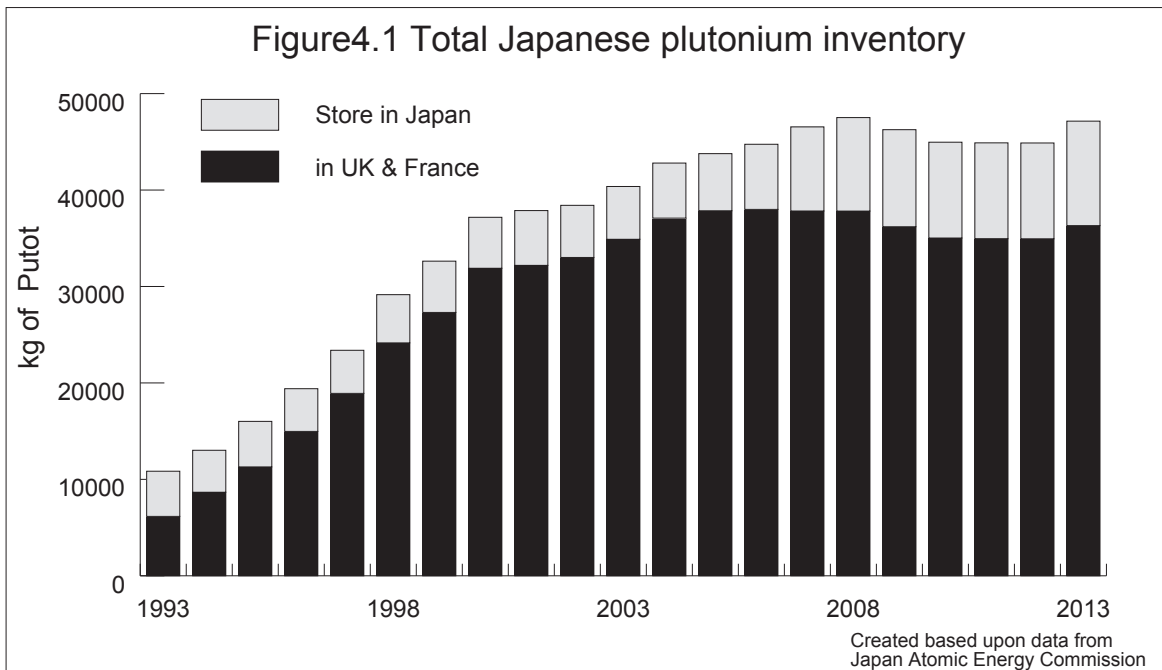
At this point, FEPC has postponed formulation of a new “plan” because of the Fukushima Daiichi Nuclear Disaster and its aftermath. But there are some nuclear power plants in which is difficult to use MOX fuel or not even restart operation because of strengthened the regulation, and the municipality and local citizens’ attitude. Moreover, there is a problem regarding whether or not it is really possible to restart nuclear power plant operations in Japan.

Even before the 2011 Fukushima Daiichi Nuclear Disaster, the Plan for the utilization of Plutonium was not proceeding smoothly. After the disaster, it is clear that the closed nuclear fuel cycle policy - reprocess all spent nuclear fuel and extract plutonium then use it as MOX fuel – and Plan for the utilization of Plutonium are bankrupt.

## 4. Japanese current plutonium surplus

Japan sent 7,100 tU of spent nuclear fuel to the UK and France for reprocessing.<sup>10)</sup> As a result of this, 36 tonnes of Japanese Plutonium (24 tPuf) stored in the UK and France. A further 11tonnes of Plutonium (7 tPuf) stored in Japan.

Compare with foreign counties which store plutonium, Japan already owns a large amount of plutonium, the world's fourth-largest civil plutonium inventory. Moreover, by operation of the Rokkasho reprocessing plant, it will add plutonium surplus because it will hard to spend all the separated plutonium as MOX fuel.



## 5. Mounting concern about Japanese plutonium surplus

Already owning 47 tonnes of plutonium, Japan will extract and separate plutonium at the Rokkasho reprocessing plant without any prospects an intended purpose.

How world sees this Japanese stance for plutonium surplus?

For instance, Energy Secretary of United States Ernest Moniz pointed that “the United States continues to believe the separation of plutonium needs to be in balance with a corresponding pathway for the eventual consumption or disposition of that material. We realize the challenges that Japan faces in this regard, given the uncertain future of nuclear power. Nevertheless, we have welcomed Japan's long-standing support for this principle of balance between plutonium separation and consumption and emphasize the importance of developing plans that will remain consistent with this policy.”<sup>11)</sup>

Chinese Foreign Ministry spokesperson Hua Chunying expressed concern about Japanese plutonium surplus. “We expect Japan to respond to the concerns of the international community, take practical action at an early date and address

the imbalance between its demand and supply of sensitive nuclear materials” 12)

## 6. Japanese politicians' idea about nuclear armaments and the real possibility of nuclear armaments

The international society is concerned about the huge Japanese plutonium surplus. There is a survey result that supports this concern.

The Japanese major newspaper Mainichi Shimbun has conducted a questionnaire on candidates for the Lower House elections from 2005. In this research, 80% of current ruling Liberal Democratic Party's candidate agree with “Japan should never consider possessing nuclear arms in the future” at the 2005 election, but this rate decreased to 53% at the 2014 election.

Some powerful politicians refer to nuclear technology deterrence.

So, could Japan possess nuclear arms in practice?

On the basis of article 9 of the Japanese pacifist constitution, Japan has been firmly committed to the Three Non-Nuclear Principles of not possessing nuclear weapons, not producing them and not permitting their entry into the country. There is also a strong anti-nuke sentiment among citizens broadly from the Hiroshima and Nagasaki experience.

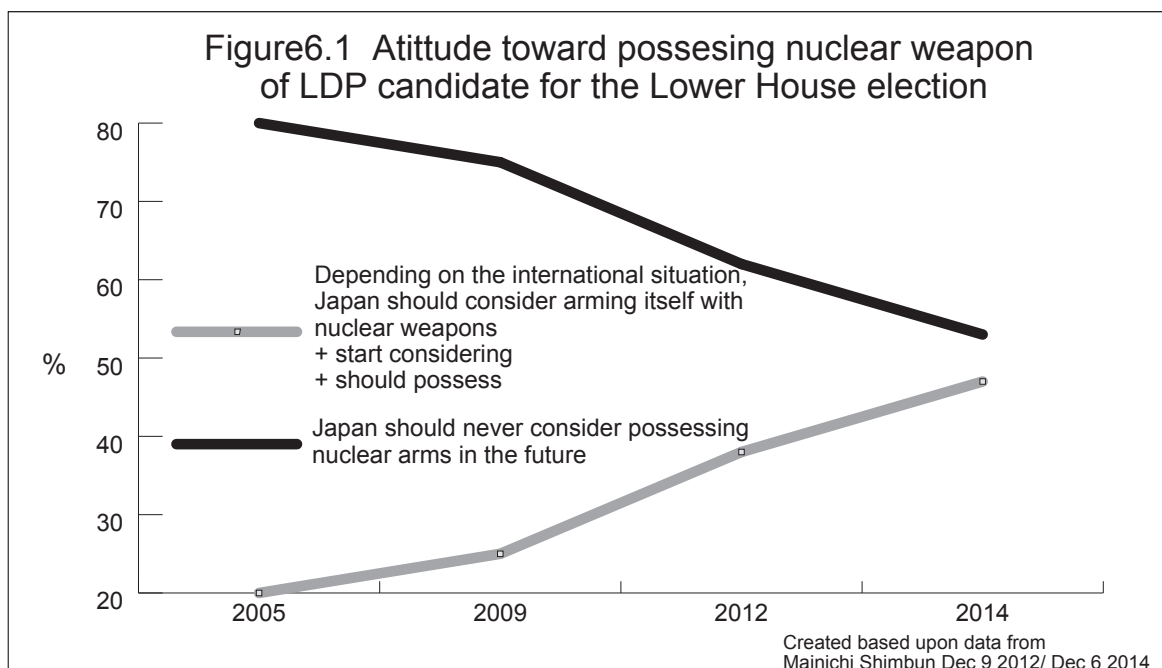
In the international political arena, if Japan proceeds to possess nuclear weapons, it will have to withdraw from the Non-Proliferation Treaty and abandon Civil Nuclear Cooperation Agreement with many countries because peaceful use is the basic premise of these agreements.

Possessing nuclear weapon is excessively risky for Japan since it might desperately worsen US-Japan relationship and escalate tension between Asian countries. Therefore it can hardly be said that becoming a nuclear-weapon state is a political option.

As seen above, possessing nuclear weapon is not a real option for Japan. But it is undeniably true that the Japanese plutonium surplus and cutover from the Rokkasho reprocessing plant become the focus of international concern.

## 7. Japan US civil nuclear cooperation agreement expires in 2018

Japan constantly proclaims to the international community its policy that it will not possess plutonium reserves without specified purposes. Japan gains international approval for reprocessing by repeatedly fabricating an unrealistic



Plan for the utilization of Plutonium with Japan Atomic Energy Commission endorsement. But in fact, the plutonium surplus with no prospect of utilization continues to grow. If the Rokkasho reprocessing plant goes live, with no prospect for MOX utilization, the plutonium surplus will swell at a much faster rate.

The reason why Japan possesses reprocessing and uranium enrichment is the United States has given acceptance for Japan under the Japan-US civil nuclear cooperation agreement signed in 1988.<sup>13)</sup> But the treaty which gives special privileges of uranium enrichment and reprocessing for Japan will expire in 2018. The international community increasing the pressure on the Japanese plutonium surplus issue.

The Government of Japan and the Government of the United States of America should return to the basic stance that avoiding the production of plutonium which can use as raw material for nuclear weapon in this 2015 NPT Review Conference and in the expiration of Japan-US civil nuclear cooperation agreement in 2018. They should also reconsider the operation of the Rokkasho reprocessing plant. The Japanese government should also stop using plutonium as MOX fuel and seriously look at the path of direct disposal of separated plutonium.<sup>14)</sup>

**Please take action to ask The Government of Japan and the Government of the United States of America to not operate Rokkasho reprocessing plant, which will increase plutonium surplus!**

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- **U.S. State Department**  
**Bureau of International Security and Nonproliferation**  
**Tel: +1-202-647-9868**  
**Contact: <https://register.state.gov/contactus/contactusform>**

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- 1) tonnes of uranium
  - 2) tonnes of plutonium in total
  - 3) tonnes of fissile plutonium
  - 4) [http://kakujo.net/ndata/Japan%20\(1996\)%20incirc549a1.pdf](http://kakujo.net/ndata/Japan%20(1996)%20incirc549a1.pdf)
  - 5) [http://www.mofa.go.jp/dns/n\\_s\\_ne/page22e\\_000304.html](http://www.mofa.go.jp/dns/n_s_ne/page22e_000304.html)
  - 6) MOX fuel is nuclear fuel made of a mixture of uranium and plutonium oxides.
  - 7) Before Fukushima Daiichi Nuclear Disaster, Japan produced 900-1000 tU/year of spent nuclear fuel.
  - 8) <http://www.fepec.or.jp/english/news/plans/index.html>
  - 9) These burned MOX fuel is fabricated in France, Belgium and UK.
  - 10) 5,600tU from LWR, and 1,100tU from Gas cooled reactor.
  - 11) <http://japan.usembassy.gov/e/p/tp-20131104-01.html>
  - 12) [http://www.chinadaily.com.cn/china/2014-06/09/content\\_17573854.htm](http://www.chinadaily.com.cn/china/2014-06/09/content_17573854.htm)
  - 13) [http://nnsa.energy.gov/sites/default/files/nnsa/05-13-multiplefiles/2013-05-02%20Japan\\_123.pdf](http://nnsa.energy.gov/sites/default/files/nnsa/05-13-multiplefiles/2013-05-02%20Japan_123.pdf)
  - 14) <http://fissilematerials.org/library/rr12.pdf>

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