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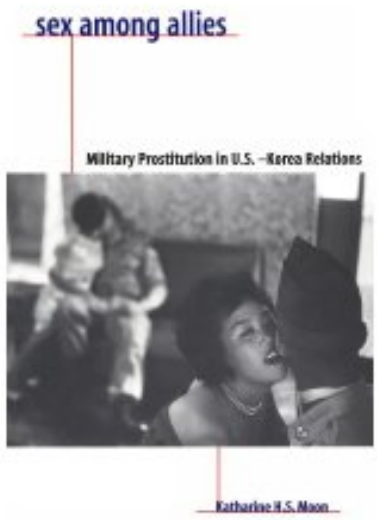
Japan as a Nuclear State

Gavan McCormack

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Client State: Japan in the American Embrace

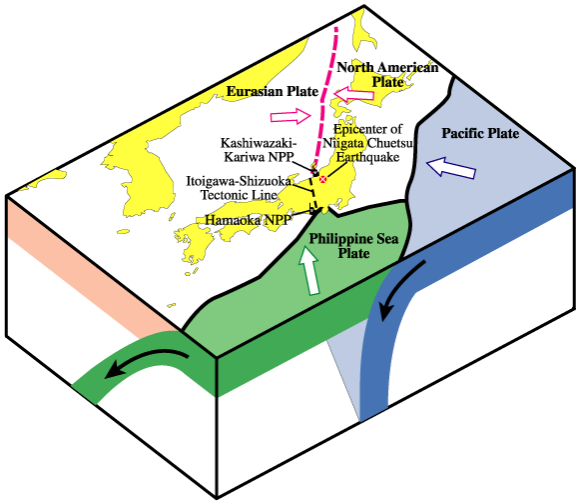
The nuclear question in relation to Japan is commonly understood in the narrow sense of whether Japan might one day opt to produce its own nuclear weapons, but I argue for a much broader construction. Japan is simultaneously unique nuclear victim country and one of the world's most nuclear committed countries. Protected and privileged within the American embrace, it has evolved into a nuclear-cycle country and plutonium super-power.

The US nuclear embrace of Japan continues to evolve. Since the chapter was written, the implications of the Bush administration's decision to promote the worldwide expansion of nuclear power generation and reprocessing, under a global-dominating cartel to be known as "Global Nuclear Energy Partnership" (GNEP), thus reversing thirty years of policy, have become gradually apparent. The US's willing "follower" states (UK, Japan, Australia) have been uniformly enthusiastic, and the civil nuclear industry seems intent on exploiting the sense of global environmental and energy crisis to promote the nuclear option as green and safe, promising a global nuclear renaissance. Under the GNEP, the world would be divided between "our" states, that will be trusted with weapons (Pakistan, India, Israel, etc) and reprocessing technologies (Japan, and if Australian Prime Minister John Howard can have his way, Australia), and those beyond the pale (at present, most prominently, North Korea and Iran). In the most recent study of the implications, the Oxford Group points out that for a global civil nuclear energy program to have a significant impact, by doubling the nuclear contribution to the global energy grid, bringing it to about one-third of the total, a new reactor would have to be built each week from now to 2075. (Frank Barnaby and James Kemp, "Too Hot to Handle: The Future of Civil Nuclear Power," Briefing Paper, Oxford Research group, July 2007.

The choice of plutonium as the material on which to rest the global economy threatens

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both the world's security and its environment, and the fast breeder technology on which the GNEP would rest has yet to be developed.



Kashiwazaki-Kariwa nuclear plant hit by the earthquake
in July 2007 was directly on a previously undetected fault line.

On 16 July 2007, following an earthquake that measured 6.8 on the Richter scale, the world's largest nuclear plant (seven reactors with total generating capacity of 8,000 megawatts), at Kashiwazaki-Kariwa in Niigata prefecture, had to be shut down indefinitely. Fifty cases of malfunctioning and other "trouble," including burst pipes, a fire, radioactive leakages into the atmosphere and into the Sea of Japan, and the toppling of hundreds of drums of low-level radioactive wastes, were reported. The plant's operators (Tokyo Electric Power Company) admitted that the quake had been more than twice as strong as the design had allowed for, and that it had been built directly atop a fault line that they had not detected. Immediate catastrophe was avoided, but 16 July held an ominous message. The government's guarantees of the safety of existing plants, and its assurances of the reliability of its nuclear-centred energy policy, rang hollow. If the country with the world's most advanced scientific and engineering skills could make such disastrous nuclear miscalculations, could the rest of the world do better?

Just as the double standards of the existing non-proliferation regime have had the effect of stimulating proliferation, so the "Partnership" threatens the spread of nuclear materials, wastes and technologies, and increases the risk of catastrophe (by accident or terrorist design), while doing little or nothing to address major global problems.

(GMcC)

For sixty years the world has faced no greater threat than nuclear weapons. Japan, as a nuclear victim country, with its `three non-nuclear principles' and its `Peace constitution', has had unique credentials to play a positive role in helping the world find a solution, but its record has been consistently pro-nuclear - that is to say, in favour of nuclear energy, nuclear reprocessing, and, as detailed below, nuclear weapons.

Weapons

So far as defence policy is concerned, Japan is unequivocal: at the core of its defence strategy are nuclear weapons - American rather than Japanese, but nonetheless weapons of mass destruction. The nuclear basis of defence policy has been spelled out in many government statements, from the National Defence Programme Outline (1976) and `Guidelines for US-Japan Defence Cooperation' (1997) to the 2005–06 agreements on transformation and realignment (see Chapter 4). [1]

So supportive has Japan been of American nuclear militarism that in1969 it entered secret clauses into its agreement with the

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US, so that the `principles' could be bypassed and a blind eye turned by the Japanese towards American vessels carrying nuclear weapons docking in or passing through Japan - an arrangement that lasted until 1992.[2] Thereafter, nuclear weapons continued to form the kernel of US security policy, but there was no longer any need to stock them in Japan or Korea, since they could be launched at any potential target – such as North Korea – from submarines, long-range bombers, or missiles. In 2002, the US articulated the doctrine of pre-emptive nuclear attack, under Conplan 8022. Conplan 8022-02, completed in 2003, spelled out the specific direction of pre-emption against Iran and North Korea. [3] By embracing an alliance with the US, Japan also embraces nuclear weapons and pre-emption.

Japan's position in denouncing the nuclear programme of North Korea rests on the distinction between its `own' - i.e. American – nuclear weapons, which are `defensive' and therefore virtuous, and North Korea's, which constitute a `threat', and must be eliminated. Logically, if Japan's security can only be assured by nuclear weapons, the same should apply to North Korea, whose case for needing a deterrent must inâ€¨any case be stronger than Japan's. Mohammed ElBaradei, director-general of the International Atomic Energy Agency (IAEA), criticizes as `unworkable' precisely such an attempt to separate the `morally acceptable' case of reliance on nuclear weapons for security (as in the case of the US and Japan) and the `morally reprehensible' case of other countries seeking to develop such weapons (Iran and North Korea). [4]

Discussions of Japan's `non-nuclear' status note that formal opposition

to possession of nuclear weapons has never been very robust. Prime Minister Kishi, in 1957, is known to have favoured nuclear weapons. In 1961, Prime Minister Ikeda told US Secretary of State Dean Rusk that there were proponents of nuclear weapons in his cabinet; and his successor, Sato Eisaku, told Ambassador Reischauer in December 1964 (two months after the first Chinese nuclear test) that `it stands to reason that, if others have nuclear weapons, we should have them too'. US anxiety led to the specific agreement the following year on Japan's inclusion within the US `umbrella'. [5] Prime Ministers Ohira (in 1979) and Nakasone (in 1984) both subsequently stated that acquiring nuclear weapons would not be prohibited by Japan's Peace constitution - provided they were used for defence, not offence. [6] In the late 1990s, and with North Korea clearly in mind, the chief of the Defence Agency, Norota Hosei, announced that in certain circum-stances Japan enjoyed the right of `pre-emptive attack'. [7] In other words, if the government chose it could invoke the principle of self-defence to launch a pre-emptive attack on facilities related to North Korean missile or nuclear facilities.

The Defence Agency's parliamentary vice minister, Nishimura Shin-go, then carried this line of argument even further by putting the case for Japan to arm itself with nuclear weapons. [8] More recently, balloons have occasionally been floated on the topic of Japan developing its own nuclear weapons. Abe Shinzo - then deputy chief cabinet secretary remarked in May 2002 that the constitution would not block Japan's possession of nuclear weapons, provided they were small. [9] North Korea's declaration that it was a nuclear power in 2005, and its 2006 launch of missiles into the Japan Sea and then its October nuclear test, further stirred these calls. Should the North Korean crisis continue to defy diplomatic resolution, and North Korea's

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position as a nuclear-armed country be confirmed, such pressures would become almost irresistible.

The moral and political coherence of Japan's Cold War nuclear policy depended both on reliance on the US `umbrella' and on support for non-proliferation and nuclear disarmament under the Non-Proliferation Treaty (NPT). But as the US - and indeed other nuclear club powers (Britain, Russia, France and China) - made clear their determination to ignore the obligation they had entered into under Article 6 of the 1970 Non-Proliferation Treaty, and reaffirmed in 2000 as an `unequivocal undertaking', for `the elimination of their nuclear arsenals', the policy became completely meaningless. As the dominant Western powers turned a blind eye to the secret accumulation of a huge nuclear arsenal by a favoured state (Israel) that refuses to join the NPT, so they tend to treat Japan as a special case, extending it nuclear privileges for reprocessing partly because of its nuclear victim status and partly because they are well aware that it exists in a special, protected relationship with the US.

Over time, like the nuclear powers themselves, once having embraced the weapons, Japan paid increasingly less attention to the supposed imperative of getting rid of them. Its cooperation in the projection of nuclear intimidation against North Korea contributed to proliferation, and brought closer the time when it might decide to possess its own weapons. Should it make such a decision, Japan already possesses a prototype intercontinental ballistic missile, in the form of its H2A rocket capable of lifting a five-tonne payload into space. It also possesses huge stores of plutonium and high levels of scientific and technical nuclear expertise. [10] No country could match Japan as a potential member of theâ€¨nuclear weapons club.

In May 2005, when the NPT Review Conference collapsed, responsibility

was equally shared by the established nuclear powers, whose hypocrisy discredited the system. Those outside the club sought to justify themselves according to the superpower principle: without nuclear weapons there is no security. In Jimmy Carter's words:

> The United States is the major culprit in the erosion of the NPT. While claiming to be protecting the world from proliferation threats in Iraq, Libya, Iran and North Korea . . . they also have abandoned past pledges and now threaten first use of nuclear weapons against non-nuclear states. [11]

Needless to say, countries such as Japan, which choose to base their national policy on `shelter' beneath the US umbrella, associate them-selves with that umbrella's threatening, as well as its defensive, function. It is a system within which Japan has become steadily more integrated, despite an almost total absence of public debate. Japan's leaders appear to embrace their resulting nuclear status without qualm.

While Japan seems to have no concerns about the nature of the `umbrella' under which it shelters, the US has been plainspoken on its determination not to rule out first use of its nuclear force. The Pentagon's `Global Strike Plan', drawn up in response to a January 2003 classified directive from the president, integrated nuclear weapons with `conventional' war-fighting capacity, and made clear the reservation of the right of pre-emption. [12] What that might mean for Korea (and for the region) beggars the imagination.

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According to a 2005 study by the South Korean government, the use of US nuclear weapons in a `surgical' strike against North Korea's nuclear facilities would, in the worst-case, make the whole of Korea uninhabitable for a decade. If things worked out somewhat better, it would only kill 80 per cent of those living within a 10-15km radius in the first two months, and would spread radiation over a mere 1,400km, thereby engulfing Seoul. [13]

The same US that in March 2003 had launched a devastating war on Iraq based on a groundless charge that that country was engaged in nuclear weapons production maintains its own arsenal of around 7,500 warheads - most of them `strategic', making them far more powerful than the bombs that destroyed Hiroshima and Nagasaki. In 2006 the US adopted a replacement schedule to produce 250 new `reliable replacement warheads' per year; it is making great efforts to develop a new generation of `low yield' small nuclear warheads, known as `Robust Nuclear Earth Penetrators' or `bunker busters', specially tailored to attack Iranian or North Korean underground complexes; it deploys shells tipped with depleted uranium, which spread deadly radioactive pollution likely to persist for centuries; it has withdrawn from the Anti-Ballistic Missile (ABM) Treaty and declared its intent not to ratify the Comprehensive Test Ban Treaty (CTBT); and it promises to extend its nuclear hegemony over the earth into space.

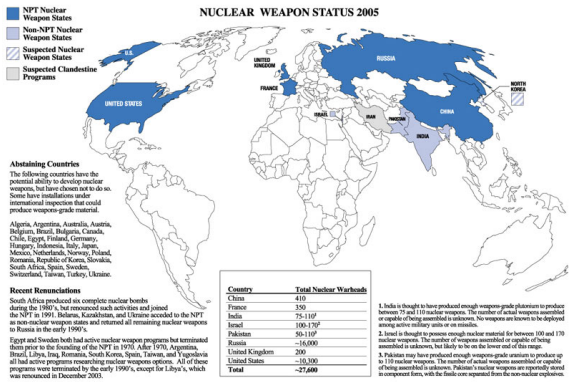
Nuclear analyst Ted Daley outlines some of the highlights of US plans:

> . . . new ICBMs - our long-range, land-based nuclear missiles that can incinerate entire cities, anywhere in the world, within the hour - coming on line in 2020 . . . new nuclear submarines and new submarine-launched ballistic missiles in 2030 . . . a new inter- continental strategic bomber in 2040. [14]

Robert McNamara, who used to run the American system, in March 2005 described US nuclear war planning as `illegal and immoral'. [15] Even though cooperation on civil nuclear energy with a non-signatory (especially a nuclear weapons state) contravenes the very essence of the NPT, in 2005 the US also lifted a thirty-year ban on the sale of civilian nuclear technology to India, describing it as `a responsible state with advanced nuclear technology'. In early 2007, Japan declared that it too would recognize India as a nuclear power, ignoring its non-adherence to the NPT. [16] Iran and North Korea, on the other hand, were roundly denounced for their insistence on a right guaranteed to them by Article 4 of the NPT.

Like the US's, Japan's non-proliferation policy is contradictory – it turns a blind eye to US-favoured countries that ignore or break the rules, such as Israel and India, while taking a hard line on countries not favoured by the US, such as Iran and North Korea. It is also passive in the area of disarmament - specifically downplaying the obligations of the US and other superpowers; and because its own defence policy rests on nuclear weapons, it is unenthusiastic about the idea of a Northeast Asian Nuclear Weapons-Free Zone. [17]

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Nuclear weapon states map

As we have already seen, the idea of Japan becoming the `Great Britain of the Far East' has been prominent in both US and Japanese thinking over the past decade. The nuclear implications of this aspiration have mostly escaped attention. Britain has long seen its power and prestige as inextricably tied to its possession of nuclear weapons. Tony Blair's government made clear in 2006 its intention - at huge expense and in defiance of its obligations under the NPT - to replace its Trident nuclear submarine flotilla, which meant in effect a commitment to retaining nuclear weapons for the foreseeable future. [18] Not only has Britain `persistently deployed tactical nuclear weapons around the world for more than forty years', as Paul Rogers notes, but `it is prepared to use nuclear weapons first, and . . . it has thoroughly embraced the idea of nuclear war fighting'. [19] The Japan of Koizumi and Abe sets great store on the paraphernalia of `great power' status, and has thoroughly embraced this dimension of its chosen model.

Energy

The Japan of `non-nuclear principles' is also in the process of becoming a nuclear superpower - the sole `non-nuclear' state that is committed to possessing both enrichment and reprocessing facilities, as well as to developing a fast-breeder reactor. Japan's Atomic Energy Commission drew up its first plans as early as 1956, and the reprocessing and fast-breeder programmes were already incorporated into its 1967 Long-Term Nuclear Programme. The dream of energy self-sufficiency has fired the imagination of successive governments, and of generations of national bureaucrats who have channelled trillions of yen into nuclear research and development programmes. The lion's share of national energy research and development (64 per cent) goes on a regular basis to the nuclear sector, and additional vast sums - already well in excess of ¥2 trillion - have been appropriated to construct and run major centres such as the Rokkasho nuclear complex. [20]

Nuclear power currently makes a modest and declining contribution to world energy needs - from 17 per cent in 1993 it had declined to 16 per cent by 2003. Just to maintain existing nuclear generation capacity globally, it would be necessary to commission about 80 new reactors over the next ten years (one every six weeks), and a further 200 over the decade that followed. [21] Of that sort of commitment, there is at present virtually no sign. The United Kingdom, for example, has more than 40 reactors; but closures were set to cut that to just one by the mid-2020s; and the US, with 100 reactors, was also expected to decommission many of them during the 2020s. [22]

At present, there are 440 reactors operating worldwide, with 28 more under construction, and a further 30 promised by 2030 in China. [23] The head of the French government's nuclear energy division, speaking to the April 2006 Congress of the Japan Nuclear Industry Association at Yokohama, estimated that, in order to raise global reliance on nuclear power from its present level to 20 per cent by mid-century, it would be necessary to construct between

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1,500 and 2,000 new reactors globally. [24] Even such a mammoth undertaking - trebling current nuclear capacity - would still make only a modest contribution to solving global energy problems.

Japan nevertheless seems intent on playing a leading role in pioneering a hitherto unprecedented level of nuclear commitment. Central to the Japanese vision of a nuclear future is the village of Rokkasho, in Aomori prefecture. Rokkasho encapsulates perhaps more than anywhere Japan's transition over the past century from an agricultural and fishing tradition,

through a traumatic burst of construction state excesses, to the full embrace of the nuclear state. Initially, a remote provincial community – a vast stretch of land, at over 5,000 hectares, and still at that time relatively untouched by industrialization - was set aside in 1971 under the Comprehensive National Development Plan, as one of eleven gigantic development sites. It was designated to host a petrochemical complex, petroleum refining, electricity generation and non-ferrous metal smelting on a scale exceeding anything then known in Japan. In due course, the oil shocks and consequent industrial restructuring saw the fading of the dream of an industrial complex, and instead large-scale oil storage facilities were set up on part of the site from 1979. From 1985, nuclear enrichment, reprocessing and waste facilities were established on one-third of the original site. Local government officials had no enthusiasmfor the nuclear course, but the deeper they sank into financial dependence,

the more difficult they found it to oppose plans generated in Tokyo. An accumulated debt of ¥240 billion was written off with an infusion of taxpayer money in 2000. Until 2005, hopes were high that the International Thermonuclear Experimental Reactor (ITER) might be built there, but that hope itself collapsed, when the project was allocated to France. [25] The likely outcome in the early twenty-first century was one that nobody in the village had dreamed of in 1971: that of becoming a centre of the global nuclear industry.

Despite the Koizumi government's mantra of privatization and deregulation, huge sums continue to be poured into nuclear projects that would never have got started - much less been sustained - by market forces alone. Public and political attention focused on the privatization of the Post Office, but much greater issues were at stake for Japan's future in decisions and commitments being made by bureaucrats far removed from public scrutiny or debate. While Japan has cosseted the nuclear industry and given it trillions of yen, its renewable energy sector (excluding large-scale hydropower) constitutes a miserable 0.3 per cent of its energy generation - planned to rise over the next ten years to 1.35, but then to decline slightly by 2030. By contrast, China plans to double its natural energy output (also excluding large-scale hydropower) to 10 per cent by 2010, and the EU has a target of 20 per cent by 2020. [26] In short, Japan stands out as a country following a course radically at odds with that of the rest of the international community. It continues to be driven bureaucratically, rather than by market forces - let alone democratic consensus.

The nuclear state: waste, fast-breeding, and the magic cycle

Whereas Three Mile Island in 1979 and Chernobyl in 1986 led to nuclear energy projects in other advanced industrial countries being frozen or drastically cut back, and reactors being mothballed and closed down, Japan increased the number of its reactors from 32 in 1987 – the year after

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Chernobyl - to 55 in 2006, which produced 29 per cent of its electric power. Two more reactors were under construction, and ten were at various planning stages. [27] By 2006, the objective set out in the Ministry of Economics, Trade, and Industry (METI)'s `New National Energy Policy' was to turn Japan into a `nuclear state' (genshiryoku rikkoku): the proportion of nuclear-generated electricity was to rise steadily to `between 30 to 40 per cent' by 2030 (compared with 80 per cent in France in 2006, making it the world's most intensive producer, and consumer, of nuclear energy). [28] Other reports suggested a goal of 60 per cent by 2050. [29] In August 2006, METIs Advisory Committee on Energy Policy produced its draft `Report on Nuclear Energy Policy: Nuclear Power Nation Plan'. [30] Its `Hiroshima Syndrome' would be put behind it, and inhibitions about safety, radiation, waste disposal and cost cast to the wind, as Japan - once a nuclear victim – set out to become a nuclear super-state.

The scale of Japan's current nuclear energy commitment is not particularly exceptional, but among non-nuclear weapon states it alone pursues development of the full nuclear cycle, in which plutonium would be used as fuel after the reprocessing of spent reactor waste. It is this bid for plutonium superpower status that distinguishes Japan. It already has stocks of plutonium amounting to more than 45 tonnes [31] - almost one-fifth of the 230-tonne global stock of civil plutonium, [32] and the equivalent of 5,000 Nagasaki-type warheads; it has thus become `the world's largest holder of weapons-usable plutonium', [33] and its stockpile continues to grow steadily. Barnaby and Burnie estimated in 2005 that, on current trends, Japan's stockpile would reach 145 tonnes by 2020 -more than the plutonium in the US nuclear arsenal. [34] Japan therefore ignored the February 2005 appeal from the director-general of the IAEA for a five-year freeze on all enrichment and reprocessing activities, arguing that such a moratorium was applicable only to `new' projects, not those such as Japan's, which had been underway for decades. [35]

When, or if, Japan begins a full programme of commercial reprocessing

at Rokkasho (planned for 2007), it will be undertaking with impunity what El Baradei sees as a highly dangerous activity that should be placed under international supervision and strictly limited, steadily adding to Japan's plutonium stocks (another 30 tonnes by 2012). [36] Moreover, it will be doing this with the positive blessing of the US, while Iran and North Korea are told that they must absolutely be stopped from doing the same - and, indeed, while countries like South Korea are also blocked from following Japan down the enrichment and recycling path. If Iran and North Korea are a threat to global non-proliferation, then so is Japan. Japan's 45 tonnes of plutonium may be usefully compared with the 10-15kg of fissile material that North Korea was accused of illicitly diverting in the 1994 crisis, or the 0.7 grams that South Korea produced in the early 1980s, and for which it was severely rebuked by the IAEA.[37]

The Federation of Electric Power Companies puts the cost of the Rokkasho facility over the projected forty-year term of its use at ¥19 trillion. [38] That would certainly make it Japan's - if not the world's - most expensive facility in modern history. Experts point out that it would cost very much less to bury the waste unprocessed (provided, that is, there was somewhere to bury them . . .), and fear that the actual cost might climb to several times the official estimate. [39] When - or if -Rokkasho's reprocessing unit begins operation in July

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2007, it will be capable of reprocessing 800 tonnes of spent fuel per year, yielding each year about eight further tonnes (1,000 warheads' worth) of pure, weapons-grade plutonium. [40] But even such a plant, though it would be the only one in Asia, would make little more than a small dent in Japan's accumulated and accumulating wastes - estimated at approxi-mately 12,600 tonnes in 2006 [41] - let alone in the 40,000 tonnes of toxic nuclear spent fuel wastes so far accumulated throughout Asia. [42]

What will Japan then do with its plutonium mountain? To address the general perception that it is the most dangerous substance known to mankind, in the 1990s it took two steps. First, it issued an assurance that it would not hold more than was necessary for commercial use. From the beginning, however, that pledge was empty. The stockpile has grown steadily because of the many delays to the plans, due largely to the many accidents (including some causing fatalities) [43] and cover-ups, [44] and continual budget over-runs that have galvanized public opposition to proposed projects. [45] Even if Rokkasho were to function for forty years without delays and technical problems, processing without any hitches 800 tonnes of spent fuel per year, spent fuel volumes would continue to grow. Japan's nuclear reactors are currently discharging 900 tonnes of waste each year - more than can be reprocessed. This figure is set to reach between 1,200 and 1,400 tonnes discharged each year by 2015, as more reactors are commissioned, so that waste would continue to accumulate steadily - mostly remaining stored at reactor sites or proposed regional interim storage sites. [46] This waste would be added to the current global stockpile of separated plutonium, standing at approximately 250 tonnes, [47] with the gap widening further as more reactors are built. [48]

The second assurance the Japanese government gave was that there was no need to worry about plutonium. The Japanese Power Reactor and Nuclear Fuel Corporation issued an informational video featuring a character - Mr Pluto - who declared that plutonium was safe enough to drink (which he duly demonstrated), and that there was little risk of it being turned into bombs. [49] When the US Energy Secretary, among others, protested at the video's inaccuracies, it was withdrawn - but the advertising campaign continued.



Monju nuclear power plant in Fukui prefecture. The plant was closed after a sodium fire in 1995 and is expected to reopen in 2008.

Until 1995, the plan had been to operate fast-breeder reactors, which `breed' very pure, `super-grade' plutonium (in other words, they produce more than they start with). Such programmes make little economic sense, since they cost four to five times as much as conventional power plants, and most projects around the world - including those in the US and UK - have been abandoned on grounds of either safety or cost. [50] The Japanese Citizens' Nuclear Information Centre judges that they are `completely incompatible with non-proliferation'. [51] Japanese plans were thrown into disarray by the shutting down of the Monju prototype fast-breeder reactor

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(at Tsuruga, in Fukui prefecture on the Japan Sea coast) after a sodium leak and fire in December 1995. Evidence was subsequently uncovered of negligence and cover-up, and the project was suspended for almost ten years. After years of protest, opponents of the project won a court victory upholding their stance that the design of the reactor was flawed. In May 2005, however, the Supreme Court over-turned that ruling and upheld the government's decision to proceed. By then, it had already cost ¥600 billion, but had yet to light a single light bulb. Under current government plans, the fast breeder was to be commercialized by 2050 - a remarkable seventy years behind its original schedule. [52] Kondo Shunsuke, head of the Atomic Energy Commission, insisted that it would nevertheless form `an important part of Japan's overall nuclear energy strategy for the twenty-first century'. [53] Not only was Monju itself to be resuscitated, but a second reactor was also to be built to replace it by around 2030, at a cost of `about ¥1 trillion'. [54] The bureaucratic dream of energy security for the twenty-first century seemed to operate on a higher plane of logic than that of economics.

Whatever the outcome of the fast-breeder project, the government also adopted a plan to burn recycled plutonium in conventional light-water reactors in the form of a plutonium-uranium oxide (MOX) fuel.[55] This process is also several times more expensive than the use of low-enriched uranium fuel, and involves much higher risk. Efforts in the late 1990s to start plutonium MOX use had failed. On current plans, Japan's utilities would begin to load plutonium fuel from around 2007-08; but on past performance it is likely to take longer, and the gap between the production of plutonium (from both European-based stocks belonging to Japan and that coming out of Rokkasho) and the ability to load it into reactors will widen further. [56]

The bottom line is that waste continues to accumulate. Low-level waste - basically comprising contaminated clothing, tools, filters, and so on - are held in over 1 million 200-litre drums, both at nationwide reactor sites and at Rokkasho's repository, whose projected eventual capacity is for three million drums. [57] Forty vast repositories are planned, each 6 metres high and 24 metres square, and containing 10,000 drums, destined eventually to be covered in soil, with something like a mountain built over them. They must then be closely guarded for at least 300 years, slowly spreading - like giant, poisonous mushrooms or the mausolea of ancient Japanese aristocrats - across the Rokkasho site. Meanwhile, fluids containing low levels of radiation are piped several kilometres out into the Pacific Ocean for discharge. The standards for effluent control at reactor sites around the country are being drastically raised in order to make regular discharges possible. [58]

High-level toxic waste - in other words, spent fuel - has since 1992 been shipped regularly across vast stretches of ocean to reprocessing plants at Sellafield, in the north of England, and la Hague, Normandy, in France. Each shipment contains the equivalent of about seventeen atomic bombs' worth of plutonium, despite the protests of countries en route and the risks of piracy or accident. [59] Once processed, the liquid high-level waste is vitrified and put into canisters, each measuring 1.3 metres by 0.43 metres, which are returned to the Rokkasho site. There they are to be stored initially for 30 to 50 years, while their surface temperature slowly declines from around 500C to 200C, at which point it is planned to bury them in 300-metre-deep underground caverns, where their radiation will continue to decay over millennia. There

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are already enough canisters to fill more than half of their first giant storehouse.

As Japan's reactors reach their `use by' date, they must be decommissioned and dismantled, and the sites cleaned. No one yet knows the exact cost, but the British authorities calculated early in 2006 a figure of £70 billion ($170 billion) for dealing with twenty of their civil nuclear sites. [60] Whatever the short-term financial inducements on offer from Tokyo, local communities are steadfastly opposed to hosting such facilities, and governors balk at the thought of their prefectures being turned into nuclear waste dumps for literally millennia. In 2002 the Fukushima prefectural governor withdrew his consent - granted four years earlier - for the construction of one such plant, and a review conducted by the prefecture reported that

> [t]he way [the nuclear bureaucrats] go about things is that, from the viewpoint of the state, there can be no change once a policy is settled, regardless of what the people or local authorities may think. But at the same time they quite readily make changes to the plan when it suits themselves, paying scant heed to the people or local authorities. [61]

But the determination of the state and nuclear energy industry to press ahead with all possible nuclear developments, and the imperative of doing something with the plutonium mountain, constitute powerful - perhaps irresistible - forces.

Due to the inadequacy of international nuclear standards, the proliferation hazards associated with reprocessing are greater than is widely believed. The best estimates are that, within such a vast system of uranium and plutonium processing and transport, a 1 per cent loss of fissile material - or `about a nuclear weapon's worth each month' -would be impossible to detect. [62] This feeds further uncertainty on the part of Japan's neighbours - especially South Korea and China.

Nuclear partnership

In the United Nations, Japan declines to associate itself with the `New Agenda Coalition' (NAC), which came into existence following the nuclear tests by India and Pakistan in 1998. The NAC seeks to exert more urgent pressure for disarmament and non-proliferation. Japan sees it as too `confrontational' - in other words, too directly challenging of the nuclear privileges of the US and the other nuclear powers. It was reported that in 2003, in the context of delicate negotiations over the North Korean nuclear issue, Japan had prevailed upon the US not to issue any security guarantee such as North Korea was seeking that might rule out the option of nuclear retaliation. [63] For Japan to join the NAC, against US wishes, might also have been to weaken the US-provided `umbrella'.

While Japan's government and bureaucracy single-mindedly pursue their chosen nuclear superpower path, its embrace with the US tightens as its distance from Asia grows. In February 2006, Washington included Japan on a shortlist of countries to be included in a projected Global Nuclear Energy Partnership (GNEP) - a kind of nuclear energy `coalition of the willing' that would include the US, Great Britain, France, Russia, China and Japan (the existing nuclear club members plus Japan). It would be designed to sidestep the existing international framework of the 1970 NPT, and establish a new nuclear cartel to control the production, processing, storage, sale, and subsequent disposal of uranium.

The project would develop a so-called

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proliferation-resistant recycling and reactor technology, maintain monopoly control over it, and then offer facilities to the rest of the world on a lease basis. [64]

Whereas Japanese governments have long been negatively disposed towards regional attempts to forge a Northeast Asian nuclear-free zone, it jumped at this American invitation to join a global nuclear superpower club, seeing it as offering an international framework for maintaining its existing activities. Australia, too - initially caught unawares by the proposal - soon became enthusiastic. Prime Minister Howard eagerly sought American advice on a visit to Washington three months later, [65] secured the blessings he sought, and issued a call for a national debate on nuclear energy. Australia could expect to play a key role in such a project - mining, manufacturing, selling and monitoring uranium for the duration of its cycle - since it is the `Saudi Arabia' of global uranium deposits (although it has so far chosen to remain a source of raw uranium, not processing it itself). [66] The prime minister - along with the defence, industry and environment ministers - has said that Australia should `consider' the option of a nuclear energy industry. [67] The global orientation of US power - evident in its construction of special relationships with the UK, Australia and Japan - would here take on a nuclear dimension.

Yet the problems are many. The major process advocated in the projected programme (advanced burner reactor or ABR technology) exists only as a theoretical proposition. The principle is the same as for the fast breeder reactor, but without the use of a breeder blanket (where the super-grade plutonium is produced). However, the application of a blanket is simple compared to the technical challenge of designing a fast reactor that would operate reliably. Thus the GNEP, if realized, would be likely to worsen the problem of nuclear proliferation. [68] Commercial-scale demonstration of the new, American-proposed technology could not be expected for twenty or twenty-five years. [69] The costs are expected to be enormous, and it is not at all clear who would bear them - although the US energy secretary has indicated that a fund of between $20 billion and $40 billion will be needed, and implied that a major contribution would be expected from Japan. [70] This requisitioning may in time come to dwarf even the levies imposed on Tokyo to fund the Gulf and Iraq wars, to prop up the dollar in international financial markets, and to feed the missile defence industry. The waste would still accumulate, and the notion that the countries supplying the technology would also be responsible for accepting and dealing with it seems inherently implausible; at any rate, Japan has been quick to exclude itself from any such obligation. [71] Not least among the problems of such a regime would be the fact that the resentments of those countries excluded from the nuclear club under the NPT regime towards its members would be bound to continue and deepen.

Above all, the Partnership would be based on positive promotion of nuclear power as the core source of future global energy, and would require that public investment by the core countries flow to the most costly and dangerous option, rather than to true renewables. There are in any case serious doubts that the world has enough uranium to follow the nuclear course, even if safety and other issues could be resolved. Uranium supplies peaked in 1981, and the existing mines can supply only half the existing demand - the rest being made up from dismantled nuclear weapon stockpiles, a source likely to be exhausted by 2013. Mines currently being developed might fill half the current gap, but unless new

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sources are discovered and developed (a process that takes a minimum of fifteen years), even existing plants will be forced to close. [72] John Busby calculates that `[p]rimary production would have to be increased 167- fold to match the anticipated global energy needs exclusively from nuclear power in 2020', and, even if nuclear power generation could be doubled - an unlikely proposition - it would be enough to meet only 5 per cent of world energy consumption. [73] Advocates of fast-breeder reactors refer to this uranium shortfall to justify the development of new designs of reactors, despite their failure over past decades. The agenda of massive expansion - whether of the still-to-be-developed Partnership technologies or of the existing light-water reactors - is simply fantastic.

The Japan of 300 years ago was a more-or-less sustainable, zero-â€¨emissions and zero-waste society. Under current Japanese government plans, 300 years from now (and indeed for 10,000 years into the future), provided all goes well, the country's northern and eastern regions will be dominated by a vast, poisonous and threatening complex, over which generation after generation - virtually forever - a heavy, militarized guard will have to be maintained. Whether Rokkasho is to become the representative model of twenty-first-century civilization (its legacy to future centuries and millennia) will be determined by the ongoing contest between Japan's nuclear bureaucracy and its civil society. The nuclear bureaucrats pursue the chimera of limitless clean energy, global leadership, a solution to global warming, and the maintenance of nuclear defences (whether American or Japanese). Japan's civil society, by contrast, is committed to the abolition of nuclear weapons, the phasing out of nuclear projects and the adoption of renewable, non-nuclear energy technologies, within a framework of democratic decision-making and social, ecological and economic sustainability. Much depends on the outcome.

Notes

[1] To quote only from the October 2005 statement, `US strike capabilities and the nuclear deterrence provided by the US remain an essential component to Japan's defense capabilities . . .', Ministry of Foreign Affairs of Japan, Security Consultative Committee Document, `US-Japan Alliance: Trans-formation and Realignment for the Future', 29 October 2005. Accessed 20 December 2006.

[2] Morton Halperin, `The nuclear dimension of the US-Japan alliance', Nautilus Institute, 1999 (accessed 20 May 2006); `Secret files expose Tokyo's double standard on nuclear policy', *Asahi Evening News*, 25 August 1999.

[3] Conplan refers to the global strike plans under which Stratcom (Strategic Command, Omaha) deals with `imminent' threats from countries such as North Korea or Iran by both conventional and nuclear `full-spectrum' options, under President Bush's January 2003 classified directive. William Arkin, `Not Just A Last Resort? A Global Strike Plan, With a Nuclear Option', *Washington Post*, Sunday, May 15, 2005.

[4] Mohammed ElBaradei, `Saving ourselves from self-destruction', *New York Times*, 12 February 2004.

[5] `60 nendai, 2 shusho ga ``kaku busoron'' Bei kobunsho de akiraka ni', *Asahi Shimbun*, 1 August 2005.

[6] Andrew Mack, `Japan and the Bomb: a cause for concern?'*Asia-Pacific Magazine*, no. 3 June 1996, pp. 5-9.

[7] Statement of 3 March 1999, quoted in Taoka Shunji, `Shuhen yuji no ``kyoryoku'' sukeru', *Asahi Shimbun*, 3 March 1999.

[8] `Nishimura quits over nuclear arms remarks', *Daily Yomiuri*, 21 October 1999.

[9] Yoshida Tsukasa, ` ``Kishi Nobusuke'' o uketsugu ``Abe Shinzo'' no ayui chisei', *Gendai*, September 2006, pp. 116-29, at p.

https://doi.org/10.1017/S1557466007021614 Published online by Cambridge University Press

127.

[10] Dan Plesch, `Without the UN safety net, even Japan may go nuclear', *Guardian*, 28 April 2003.

[11] Jimmy Carter, `Saving nonproliferation', *Washington Post*, 28 March 2005.

[12] William Arkin, `Not just a last resort: A global plan with a nuclear option', *Washington Post*, 15 May 2005.

[13] Chosun ilbo, (Seoul: Chosun ilbo), 6 June 2005.

[14] Ted Daley, `America and Iran: Three nuclear ironies',*Truthdig*, 7 July 2006,. Accessed 25 July 2006.

[15] Robert McNamara, `Apocalypse Soon',*Foreign Policy*, May-June 2005, reproduced in *Japan Focus*, 8 May 2005,

[16] `Government to ok India as N-state',*Yomiuri Shimbun*, 10 January 2007.

[17] For outlines of a `Northeast Asian Nuclear Weapon-Free Zone', see Hiromichi Umebayashi, `A Northeast Asian Nuclear Weapon-Free Zone', *Northeast Asia Peace and Security Network*, Special Report, 11August 2005. (accessed 23 October 2005); and Umebayashi Hiromichi, `Nihon dokuji no hokatsuteki kaku gunshuku teian o', Ronza, June 2005, pp. 188-93.

[18] Paul Rogers, `Britain's nuclear weapon fix', and `Nuclear weapons: the oxygen of debate', *Open Democracy*, 29 June and 29 December 2006. Accessed 10 January 2007.

[19] Rogers, `Nuclear weapons: the oxygen of debate'.

[20] Citizens' Nuclear Information Center (CNIC), `Cost of Nuclear Power in Japan', Tokyo, 2006,. Accessed 10 January 2007.

[21] `Nuclear power for civilian and military use', *Le Monde Diplomatique, Planet in Peril* (Arendal, Norway: UNEP/GRID-Arendal, 2006), p.16.

[22] `Genpatsu no seisui wakareme', *Asahi Shimbun*, 6 June 2006.

[23] Michael Meacher, `Limited Reactions', *Guardian Weekly*, 21-27 July 2006, p. 17.

[24] Quoted in `Genpatsu no seisui wakareme', *Asahi Shimbun*, 6 June 2006.

[25] Tsukasa Kamata, `Huge tract for ITER sits vacant', Japan Times, 25 November 2006.

[26] Iida Tetsuya, `Shizen enerugii fukyu o', *Asahi Shimbun*, 8 June 2004.

[27] Many have been constructed on active tectonic faultlines where major earthquakes occur frequently. Leuren Moret, `Japan's deadly game of nuclear roulette', Japan Times, 23 May 2004, revised version at *Japan Focus*, 29 November 2005.

[28] According to the `New National Energy Strategy' published by the Ministry

of Economics, Trade and Industry. Keizai sangyosho, Shin Kokka Enerugii

Senryaku, May 2006. Accessed 30 November 2006.

[29] `Safe storage of nuclear waste', editorial, *Japan Times*, 25 July 2006.

[30] Sogo shigen enerugii chosakai, denki jigyo bunkakai, genshiryoku bukai (Subcommittee on Nuclear Energy Policy, Advisory Committee on Energy Policy, Ministry of Economy, Trade and Industry (METI); Genshiryoku rikkoku keikaku (Report on Plan to Build a Nuclear Energy Based Nation), draft, 8 August 2006.

[31] Frank Barnaby and Shaun Burnie, Thinking the Unthinkable: Japanese Nuclear Power and Proliferation in East Asia (Oxford and Tokyo: Oxford Research Group and Citizens' Nuclear Information Center, 2005), p. 17. Around three-quarters of that is presently being processed in Britain's Sellafield, and will be returned to Japan in due course. Eric Johnston, `Nuclear foes want Rokkasho and Monju on UN nonproliferation agenda', *Japan Times*, 2 April 2005.

[32] `Nuclear power for civil and military use', *Le Monde Diplomatique*, p. 17.

[33] Barnaby and Burnie, *Thinking the Unthinkable*, p. 8.

https://doi.org/10.1017/S1557466007021614 Published online by Cambridge University Press

[34] *Ibid*., p. 8.

[35] Mohammed ElBaradei, `Seven steps to raise world security', *Financial Times*, 2 February 2005.

[36] Suzuki Manami, *Kaku taikokuka suru Nihon* (Tokyo: Heibonsha shinsho, 2006), p. 214.

[37] Director General, IAEA, `Implementation of the NPT Safeguards Agreement

in the Republicof Korea,' 11 November 2004 (Geneva: IAEA). Accessed 15 March 2007.

[38] Yoshioka Hitoshi, `Genpatsu wa ``kaiko'' ni atai suru no ka', *Asahi Shimbun*, 21 November 2005.

[39] Such cost would amount to between one-half and two-thirds of the costs of

reprocessing. Yoshioka, `Genpatsu wa ``kaiko'' . . .'.

[40] Shaun Burnie, `Proliferation Report: sensitive nuclear technology and plutonium technologies in the Republic of Korea and Japan, international collaboration and the need for a comprehensive fissile material treaty', paper presented to the International Conference on Proliferation Challenges in East Asia, National Assembly, Seoul, 28 April 2005, p. 18.

[41] Estimate by Shaun Burnie, Greenpeace International, personal communication, 4 September 2006. For table showing projected spent fuel waste accumulation to 2050, see Tatsujiro Suzuki, `Global Nuclear Future: A Japanese Perspective' (Melbourne: Nautilus Institute at RMIT University, September 2006). Accessed 15 October 2006.

[42] Michael Casey, `Asia embraces nuclear power, *Seattle Times*, 28 July 2006. US stocks of spent nuclear fuel amounted to 53,000 metric tonnes as of December 2005, projected to rise by 2010 to between 100,000 and 1,400,000 (sic). (US Department of Energy, May 2006).

[43] Monju experimental fast breeder was shut down from 1995 after leakage of a tonne of liquid sodium from the cooling system. Two workers were killed, and hundreds exposed to radiation, in a 1999 accident at Tokaimura fuel processing plant when workers carelessly mixed materials in a bucket, causing criticality and near catastrophe. Five more were killed when sprayed with superheated steam from a corroded cooling system pipe in a 2004 accident at Mihama.

[44] Plans for large-scale plutonium use in the form of mixed oxide fuel (MOX) collapsed in 1999-2001, when it was revealed by Japanese environmental groups that vital quality control data for fuel delivered to Kansai Electric by British Nuclear Fuels had been deliberately falsified. The effect of this was to galvanize opposition in three prefectures selected for MOX fuel use - Fukui, Fukushima and Niigata.

[45] Burnie, `Proliferation Report', p. 19.

[46] Takubo Masafumi, `Kadai wa New York de wa naku, Nihon ni aru', *Sekai*,

June 2005, pp. 142-51, at p. 151.

[47] H. A. Feiveson, Princeton University, statement at UN meeting, 24 May

2005. Accessed 12 July 2006.

[48] Eric Johnston, `Nuclear fuel plant not biz a usual', *Japan Times*, 10 August

2004.

[49] Scientific American (Digital), May 1994. Accessed 3 December 2006.

[50] Yoshida Yoshihiko, `NPT o ketsuretsu saseta no wa Beikoku no tandoku kodoshugi', *Ronza*, August 2005, pp. 154-9.

[51] CNIC, `Statement by CNIC and Greenaction about GNEP', 11 July 2006.

[52] Ibid.

[53] Eric Johnston, `Safety concerns remain: one decade after accident, Monju may be reborn', *Japan Times*, 9 December 2005.

[54] `New fast-breeder reactor to replace

https://doi.org/10.1017/S1557466007021614 Published online by Cambridge University Press

prototype Monju', *Asahi Shimbun*, 27 December 2005.

[55] `Editorial: Pluthermal project', *Asahi Shimbun*, 16 February 2006.

[56] Suzuki, p. 214. Plutonium stocks will reach sixty tonnes by 2010, and remain thereafter at above 50 tonnes.

[57] Hirata Tsuyoshi, `Shinso no kaku haikibutsu', *Shukan Kinyobi*, 25 May 2003, pp. 38-41.

[58] Although such discharge only began in March 2006, seawater levels of radioactivity soon rose, sparking protests from the governor of Iwate prefecture (into which the currents from Rokkasho flow) and local fishermen. CNIC, `Active tests at the Rokkasho Reprocessing plant', June 2006, and Koyama Hideyuki, `Sanriku no umi ni hoshano hoshutsu nodo wa genpatsu no 2700 bai', *Shukan Kinyobi*, 19 May 2006, p.5.

[59] George Monbiot, `Dirty bombs waiting for a detonator', *Guardian*, 11 June 2002.

[60] Jim Giles, `Nuclear power: Chernobyl and the future: when the price is right', *Nature*, no. 440, 20 April 2006, pp. 984-6.

[61] Sato Eisaku, `Tachidomari kokuminteki giron o', *Asahi Shimbun*, 24 May 2003.

[62] Barnaby and Burnie, *Thinking the Unthinkable*, p. 9.

[63] Umebayashi, `Nihon dokuji no', p. 193.

[64] US Department of Energy, `The Global Nuclear Energy Partnership', updated July 2006.

[65] Geoff Elliott, `US backs Howard's nuclear vision', *The Australian*, 17 August 2006.

[66] Paul Sheehan, `A thirsty world running dry', *Sydney Morning Herald*, 31 July 2006.

[67] Anthony Albanese, `Twenty years on: lest we forget the lessons of Chernobyl', Sydney Morning Herald, 26 April 2006.

[68] Citizens Nuclear Information Center (CNIC) and Green Action, `Japan should withdraw its opportunistic, cynical and impractical offer to cooperate with the US Global Nuclear Energy Partnership', statement,10 July 2006. Accessed 1 October

2006.

[69] US Department of Energy, `The Global Nuclear Partnership', p. v.

[70] `Kaku gijutsu kaihatsu, Bei ``saidai 4 cho 7000 oku en'', Bei chokan kenkai, Nihon nado no kyoryoku kitai', *Chugoku Shimbun*, 17 February 2006.

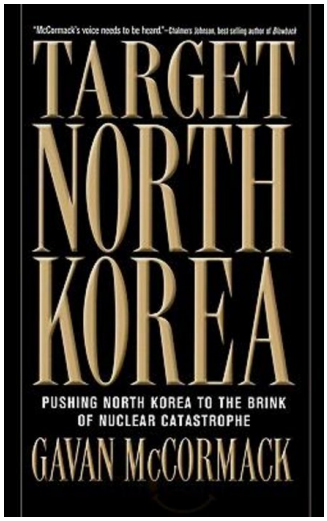
[71] CNIC and Green Action, `Japan should withdraw . . .'.

[72] Michael Meacher, `Limited Reactions', *Guardian Weekly*, 21-27 July 2006, p. 17.

[73] John Busby, `Why nuclear power is not the answer to global warming', Power Switch, 25 May 2005,.

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