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LAKA

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Stichting Laka: Documentatie- en onderzoekscentrum kernenergie

De Laka-bibliotheek

Dit is een pdf van één van de publicaties in de bibliotheek van Stichting Laka, het in Amsterdam gevestigde documentatie- en onderzoekscentrum kernenergie.

Laka heeft een bibliotheek met ongeveer 8000 boeken (waarvan een gedeelte dus ook als pdf), duizenden kranten- en tijdschriften-artikelen, honderden tijdschriftentitels, posters, video's en ander beeldmateriaal. Laka digitaliseert (oude) tijdschriften en boeken uit de internationale antikernenergie-beweging.

De catalogus van de Laka-bibliotheek staat op onze site. De collectie bevat een grote verzameling gedigitaliseerde tijdschriften uit de Nederlandse antikernenergie-beweging en een verzameling video's.

Laka speelt met oa. haar informatie-voorziening een belangrijke rol in de Nederlandse anti-kernenergiebeweging.

The Laka-library

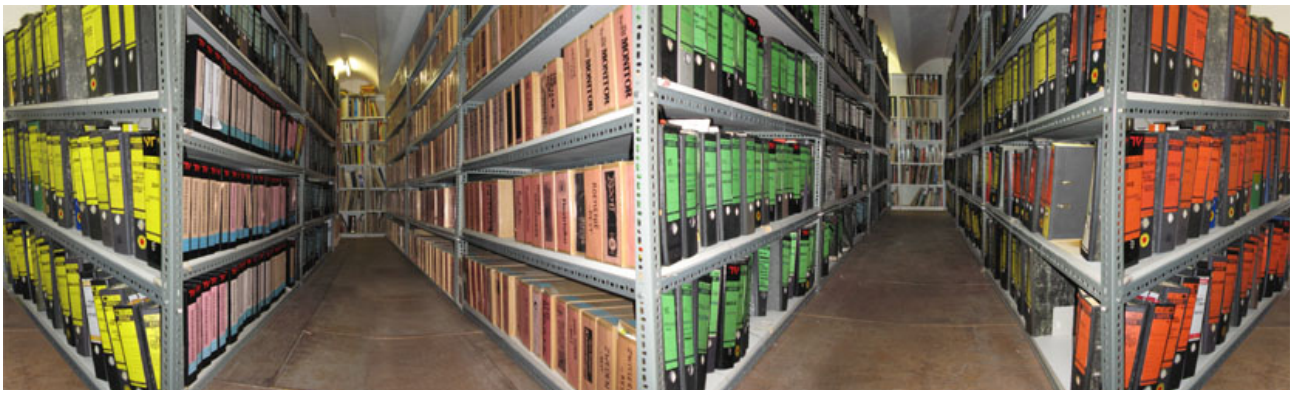
This is a PDF from one of the publications from the library of the Laka Foundation; the Amsterdam-based documentation and research centre on nuclear energy.

The Laka library consists of about 8,000 books (of which a part is available as PDF), thousands of newspaper clippings, hundreds of magazines, posters, video's and other material.
Laka digitizes books and magazines from the international movement against nuclear power.

The catalogue of the Laka-library can be found at our website. The collection also contains a large number of digitized magazines from the Dutch anti-nuclear power movement and a video-section.

Laka plays with, amongst others things, its information services, an important role in the Dutch anti-nuclear movement.

Appreciate our work? Feel free to make a small donation. Thank you.



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Synapse
Energy Economics, Inc.

The Risks of Building New Nuclear Power Plants

New York Society of Security Analysts

June 8, 2006

Presented by David Schlissel

Investments in New Nuclear Plants Remain Very Risky

- Industry optimistically estimates that new generation of nuclear plants can be built for $1,500 - $2,000 per KW.
- However, none of the new plant designs under consideration in the U.S. have actually been built.
- In addition, nuclear industry has a serious credibility issue concerning the reliability of nuclear construction cost estimates.

US Nuclear Industry Construction Cost Experience

- Data compiled by U.S. Department of Energy reveals that total estimated cost of 75 of today's nuclear units was $45 billion in 1990 dollars.
- Actual cost of the 75 units was $145 billion, also in 1990 dollars.
- $100 billion cost overrun was more than 200 percent above the initial cost estimates.
- $100 billion overrun does not include escalation and interest.

U.S. Nuclear Industry Construction Cost Experience

- DOE study understates cost overruns because (1) it does not include all of the overruns at all of the 75 units and (2) it does not include some of the most expensive plants – e.g. Comanche Peak, South Texas, Seabrook, Vogtle.
- For example, cost of the two unit Vogtle plant in Georgia increased from $660 million to $8.7 billion in nominal dollars – a 1200 percent overrun.

U.S. Nuclear Industry Construction Cost Experience

Year Construction Started	Estimated Overnight Cost (1990$)	Actual Overnight Cost (1990$)	Percentage Over
1966-67	$560/kW	$1,170/kW	209%
1968-69	$679/kW	$2,000/kW	294%
1970-71	$760/kW	$2,650/kW	348%
1972-73	$1,117/kW	$3,555/kW	318%
1974-75	$1,156/kW	$4,410/kW	381%
1976-77	$1,493/kW	$4,008/kW	269%

Recent World Nuclear Construction Experience

Country	Name of Plant	Start of Commercial Operation	Overnight Cost (2003$)
Japan	Onagawa 3	January 2002	$2,417/kW
Japan	Genkai 3	March 1994	$2,827/kW
Japan	Genkai 4	July 1997	$2,296/kW
Japan	Kariwa 6	NA	$2,027/kW
Japan	Kariwa 7	NA	$1,796/kW
South Korea	Yongwang 5&6	2004/2005	$2,308/kW

Mega-Project Construction Cost Experience

- New billion dollar mega-projects traditionally cost much more than original estimates.
- Especially true for first-of-a-kind projects
- 1988 RAND Corporation studied the performance of 52 mega-projects.
- Study concluded that: "the data on cost growth, schedule slippage and performance shortfalls of megaprojects are certainly sobering, but the most chilling statistic is that only about one in three of these projects is meeting its profit goals… Megaprojects take so long to develop from concept to reality that the need or opportunity for profits that originally spawned them may have passed by the time they are ready to begin producing"

Nuclear Power Not Entirely a Domestic Source of Energy

- Uranium increasingly imported from abroad.
- Originally, most of uranium used in U.S. nuclear plants came from U.S. sources.
- US once largest uranium producer, now ranks only 8th in the world.
- In 2004, over 80 percent of uranium for U.S. nuclear plants was imported from foreign countries.
- 14 foreign countries sell uranium to the U.S. including Australia, Canada, Russia, Kazakhstan, Uzbekistan, South Africa and Namibia.

What U.S. is doing to encourage investment in new nuclear units

- Streamlining licensing process
  - Early Site Permitting
  - Combined construction and operating licenses
  - Significantly limited role for public in hearing process
  - NRC pre-approval of standardized plant designs
- Financial incentives in EPACT 2005
  - Extension of Price-Anderson Act to 2025
  - 1.8 cents per kWh tax credit for first 6,000 MW of new nuclear generation for first 8 years of operation. Limited to a total of $125 million per 1,000 MW of new generation
  - Insures utilities for construction delays due to hearings or litigation.
  - Federal guarantees for up to 80 percent of estimated project costs for innovative technologies – including new advanced nuclear reactor designs – that will diversify and increase energy supply while protecting the environment.
- Moral Support from federal government

Remaining Nuclear Risks

- Risk of higher construction costs
  - Some significant increases in construction costs should be expected even if actions by federal government and nuclear industry mean no repeat of the 200 percent or higher overruns experienced by the existing generation of plants.
- Risk of plant cancellations
  - More than 50 percent of planned reactors were cancelled.
- Public Acceptance of new nuclear units could be lost if a significant accident/event occurs at any nuclear power plant.

Remaining Nuclear Risks (con't)

- Risks associated with the temporary storage and the permanent disposal of high level nuclear wastes.
- Risk of nuclear terrorism.
- Risks resulting from deregulation of electric industry in areas of the U.S.

Nuclear and Global Climate Change

- New nuclear power plants are being promoted as a green option for reducing emissions of greenhouse gases.
- However, analyses show that there are renewable and energy efficiency that are more economic and carry fewer risks than new nuclear units.
- For example, in 2005 Synapse compared the cost of a new nuclear unit with an alternative portfolio of wind, energy efficiency and natural gas-fired generation.

2005 Synapse Study

Type of Capacity	Installed Capacity Rating	Capacity Factor	Generation (GWh)	Cents/kWh Cost (2003)	Total Cost of GWh Generated (2003$)
Nuclear	2,180 MW	90%	17,187	6.8	$1,169 million
Portfolio:					
Wind	1,500 MW	35%	4,599	4.5-6.0	$207-$276 million
Gas	1,220 MW	85%	9,084	4.7	$427 million
Efficiency	NA	NA	3,504	4.4	$154 million
Combination	NA	NA	17,187	4.7	$788-$806 million

