Producers

Companies Involved in Nuclear Weapons Work

he 20 companies described in this chapter are involved in the design, development, manufacture, modernization and maintenance of nuclear weapons and their delivery vehicles for the United States, the United Kingdom, France and India. Details are provided on the specific role of each company in the nuclear weapons industry.

Information on how the 20 companies were selected can be found in the introduction to this report under the section on methodology. The list is slightly more expansive than the nuclear weapons exclusion lists maintained, for example, by the Dutch financial institutions Pensioenfonds Zorg en Welzijn and PGGM.¹²⁸ A dozen of the companies on our list are excluded by the Norwegian Government Pension Fund due to their involvement in the production of either nuclear weapons or cluster munitions.¹²⁹ Bechtel generally does not appear on exclusion lists, as it is a privately owned company; nor does Redhall Group, perhaps because it is small compared with the others. In Chapter 5, we provide details on the financing of each of the 20 selected nuclear weapons companies. While our list of companies captures most of the major companies involved in the nuclear weapons complex, it is by no means exhaustive.

COMPANY	HEADQUARTERS	WEBSITE	REVENUES*	NET PROFIT*	EMPLOYEES
Alliant Techsystems	Mineapolis, MN	atk.com	US\$4.8b	US\$313m	18,000
Babcock & Wilcox	Charlotte, NC	babcock.com	US\$2.7b	US\$153m	12,000
Rabcock International	London	babcock.co.uk	US\$4.3b	US\$163m	27,000
💥 BAE Systems	London	baesystems.com	US\$32.6b	US\$1,600m	107,000
Bechtel	San Francisco, CA	bechtel.com	US\$27.9b	n/a	49,000
Boeing	Chicago, IL	boeing.com	US\$64.3b	US\$3,300m	164,000
EADS	Leiden	eads.com	US\$60.7b	US\$759m	122,000
Finmeccanica	Rome	finmeccanica.com	US\$24.8b	US\$766m	75,000
E GenCorp	Rancho Cordova, CA	gencorp.com	US\$0.86b	US\$7m	3,000
General Dynamics	West Falls Church, VA	gd.com	US\$32.5b	US\$2,600m	92,000
Honeywell International	Morristown, NJ	honeywell.com	US\$33.4b	US\$2,000m	130,000
Jacobs Engineering	Pasadena, CA	jacobs.com	US\$9.9b	US\$313m	60,000
Larsen & Toubro	Mumbai	larsentoubro.com	US\$11.3b	US\$977m	38,000
Lockheed Martin	Bethesda, MD	lockheedmartin.com	US\$45.8b	US\$2,900m	126,000
Northrop Grumman	Falls Church, VA	northropgrumman.com	US\$34.8b	US\$2,100m	75,000
🚟 Redhall Group	Wakefield	redhallgroup.co.uk	US\$0.3b	US\$6m	1,500
Rolls-Royce	London	rolls-royce.com	US\$17.1b	US\$839m	40,000
Safran	Paris	safran-group.com	US\$14.6b	US\$675m	53,000
Serco	Hook	serco.com	US\$6.7b	US\$243m	100,000
Thales	Paris	thalesgroup.com	US\$17.4b	-US\$143m	64,000

* Figures are generally from the most recent financial year. However, where that information was not available, figures are from the previous financial year.

Alliant Techsystems

Company Profile

Alliant Techsystems (ATK), based in the United States, supplies aerospace and defence products to the US government, allied nations and prime contractors. The company's main business segments are aerospace systems, armament systems, missile products, and security and sporting.⁸⁹ In the financial year ended 31 March 2011, ATK reported revenues of US\$4.8 billion, resulting in an operating profit of US\$526 million and a net profit of US\$313 million.¹³¹

Nuclear Weapons

The aerospace systems segment of ATK produces rocket propulsion systems for the Trident II D5 fleet ballistic missile.¹³² The Trident II D5 is a three-stage, solid propellant, inertial guided missile system that is the primary strategic weapons programme in the US navy's fleet ballistic missile system. Deployed in 1990, the Trident II D5 is the only US submarine-launched strategic missile system still in production. The D5 missiles are launched underwater from Trident submarines, which have 24 launch tubes.

Lockheed Martin is the prime contractor for the rocket propulsion systems. In November 2009 Alliant Techsystems received a US\$100-million contract from Lockheed Martin to produce rocket propulsion systems for all three stages of the US navy's Trident II D5 through calendar year 2013.¹³³

In addition, the aerospace systems segment of ATK produces rocket propulsion systems for the Minuteman III intercontinental ballistic missile, the core component of the US nuclear arsenal for the past four decades. ATK is responsible for refurbishing all three solid propellant stages of the missile, with Northrop Grumman as the project leader. During 2010 the 10-year Minuteman Propulsion Replacement Program was completed. ATK produced approximately 1,800 remanufactured motors.¹³⁴

Production continues in 2011 and 2012 at a lower rate under the Minuteman Solid Rocket Motor Warm Line program, headed by Northrop Grumman. ATK will produce up to ten motor sets over two years.¹³⁵



Babcock & Wilcox

Company Profile

Babcock & Wilcox, based in the United States, provides energy technology and services primarily for the nuclear, fossil fuel and renewable power markets worldwide. The company's four business units are nuclear energy, nuclear operations, power generation and technical services.¹³⁶

In the financial year ended 31 December 2010, Babcock & Wilcox reported revenues of US\$2.7 billion, resulting in an operating profit of US\$264 million and a net profit of US\$153 million.¹³⁷

Nuclear Weapons

Babcock & Wilcox supplies nuclear components to the US government for defence programmes and also provides various services, including uranium processing, environmental site restoration and operating services, for a number of governmentowned facilities, primarily within the nuclear weapons complex of the Department of Energy.

The nuclear operations division of the company specializes in the design and manufacture of components for the US government. The division engages in uranium processing as well as the manufacture of heavy-walled nuclear components and vessels. Its subsidiary Nuclear Fuel Services operates a uranium fuel materials production facility to support the US fleet of nuclear-powered submarines and aircraft carriers.¹³⁸

The technical services division of the company operates the Pantex plant of the National Nuclear Security Administration, where it modernizes nuclear warheads for the Trident missiles of the US navy.¹³⁹



Babcock International

Company Profile

Babcock International, based in the United Kingdom, provides engineering support services. It operates in four divisions: marine, defence and security, support services and international.¹⁴⁰ In the financial year ended 31 March 2011, it reported revenues of $\pounds 2.8$ billion (US\$4.3 billion), resulting in an operating profit of $\pounds 158$ million (US\$246 million) and a net profit of $\pounds 105$ million (US\$163 million).¹⁴¹

Nuclear Weapons

The marine division of Babcock International in 2007 started the Future Submarines project with BAE Systems and Rolls-Royce. The objective of this project is to develop *Successor*, a new class of nuclear-armed submarine for the British navy, which will replace the present *Vanguard*-class submarines armed with nuclear Trident ballistic missiles.¹⁴²

The marine division of the company is also involved in the maintenance of the *Vanguard*-class submarines. In its 2011 annual report, Babcock International states that the British government committed to retain the current submarine-based nuclear deterrent, providing a key role for the division in the so-called "*Vanguard* life extension project".¹⁴³

Additionally, the nuclear services division of Babcock International is a frequent subcontractor for the United Kingdom's Atomic Weapons Establishment for decommissioning and waste management activities.¹⁴⁴



😹 BAE Systems

Company Profile

BAE Systems, based in the United Kingdom, operates as a defence, security and aerospace company worldwide. The company's main segments are electronics, intelligence and support, land and armaments, programmes and support, and international.¹⁴⁵ In the financial year ended 31 December 2010, BAE Systems reported revenues of £21.1 billion (US\$32.6 billion), resulting in an operating profit of £1.6 billion (US\$2.5 billion) and a net profit of £1.1 billion (US\$1.6 billion).¹⁴⁶

Nuclear Weapons

BAE Systems' international division holds a 37.5% share in MBDA, a joint venture with EADS and Finmeccanica. MBDA is a world leader in missiles and missile systems, producing over 3,000 missiles in 2010.¹⁴⁷ MBDA builds the ASMPA nuclear missiles for the French air force, which can be launched from the *Mirage* 2000N fighter plane and the new *Rafale* fighter plane. The manufacturing of the missiles does not include the manufacturing of the nuclear warhead itself, which is done by the government agency *Commissariat á l'energie atomique*. The ASMPA was taken into service in November 2010.¹⁴⁸

The current *Vanguard*-class submarines, which are equipped with Trident nuclear missiles, were developed by BAE Systems between 1986 and 1999.¹⁴⁹ Together with Babcock Marine and Rolls-Royce, BAE Systems in 2007 started the Future Submarines project. The objective of this project is to develop *Successor*, a new class of nuclear-armed submarine for the British navy, which will replace the present *Vanguard*-class submarines armed with nuclear Trident ballistic missiles.¹⁵⁰

BAE SYSTEMS

Bechtel

Company Profile

Bechtel Group, a private company based in the United States, operates as an engineering, construction and project management company. Its business units are civil infrastructure, communications, mining and metals, oil, gas and chemicals, power and US government services.¹⁵¹ In the financial year ended 31 December 2010, it reported revenues of US\$27.9 billion. Profits are not reported by the company.¹⁵²

Nuclear Weapons

Bechtel's business unit Bechtel National assists the US Department of Energy in the areas of national security, scientific research and environmental cleanup. It manages two laboratories for the department: Los Alamos National Laboratory in New Mexico (since 2006) and Lawrence Livermore National Laboratory in California (since 2007).¹⁵³

Lawrence Livermore is responsible for monitoring the "safety and reliability" of the US nuclear stockpile. The laboratory also engages in the design and production of nuclear weapons.¹⁵⁴ The Stockpile Stewardship programme, which provides experimental capabilities to maintain confidence in the safety and performance of US nuclear weapons, is placed under this laboratory. The Stockpile Stewardship is also responsible for maintaining the ability to resume underground nuclear testing.¹⁵⁵

Bechtel is constructing the Hanford Waste Treatment Plant for the US Department of Energy, a facility in Washington State on the site of a former nuclear production facility, which will be the world's largest radioactive waste treatment plant.¹⁵⁶



Boeing

Company Profile

Boeing, based in the United States, is the world's largest aerospace company and a leading manufacturer of jetliners and defence, space and security systems. Its products and services include commercial and military aircraft, satellites, weapons, electronic and defence systems and launch systems.¹⁵⁷

In the financial year ended 31 December 2010, Boeing reported revenues of US\$64.3 billion, resulting in an operating profit of US\$5 billion and a net profit of US\$3.3 billion.¹⁵⁸

Nuclear Weapons

Since 1958 Boeing has been responsible for the development and production of the US long-range nuclear LGM-30 Minuteman ballistic missiles (versions I, II and III). These are intercontinental ground-to-ground missiles, of which the United States had roughly 1,000 in operation around 1975.¹⁵⁹

As a member of the ICBM Prime Integration Team, Boeing is involved in the maintenance of the 500 Minuteman III nuclear intercontinental ballistic missiles in the US arsenal. It is responsible for guidance, flight controls, secure codes, ground subsystems, weapons systems testing and engineering in this project led by Northrop Grumman, which will continue into 2012¹⁶⁰ and likely be extended.¹⁶¹

Until 2005, Boeing also carried out sustained engineering work for the United States' 50 *Peacekeeper* intercontinental ballistic missiles. This project was also led by Northrop Grumman.¹⁶² The *Peacekeeper* missiles were taken out of service in September 2005.¹⁶³

Boeing also produces the B-52 *Stratofortress*, which is a long-range, strategic heavy bomber capable of dropping or launching the widest array of weapons in the US inventory. It entered service in 1954. The latest version, the B-52H, can carry up to 20 airlaunched cruise missiles. The B-52H can carry nuclear or precision-guided conventional ordnance.¹⁶⁴



EADS

Company Profile

European Aeronautic Defence and Space Company (EADS), based in the Netherlands, engages in the manufacture and sale of commercial aircraft, civil and military helicopters, commercial space launch vehicles, missiles, military aircraft, satellites, defence systems and defence electronics.¹⁶⁵ In the year ended 31 December 2010, EADS generated revenues of €45.8 billion (US\$60.7 billion), resulting in an operating profit of €1.2 billion (US\$1.6 billion) and a net profit of €572 million (US\$759 million).¹⁶⁶

Nuclear Weapons

EADS is involved in the French nuclear weapons programme. Its subsidiary Astrium develops and produces the M4 generation of ballistic missiles, which feature multiple warheads and have a range of over 4,000 km. Astrium also developed an enhanced version, the M45, with higher-performance TN75 nuclear warheads. The M45 entered service aboard the *Triomphant* submarine in 1997. Astrium is responsible maintaining these missiles.¹⁶⁷

In December 2004 Astrium entered into a contract to build the new M51 nuclear missile for the new French submarines, with an estimated value of \notin 3 billion. Astrium is the lead contractor, whereas Safran, SNPE, DCN and Thales are the main subcontractors.¹⁶⁸ The M51 features multiple warheads, with far greater payload mass and volume, than the M4. It also offers a longer range, enabling submarines to expand their patrol zones. The nuclear submarine *Le Terrible* has been equipped with the M51 since late 2010.

The missile will also enter operational service aboard the other new-generation submarines, *Triomphant* and *Téméraire*, after retrofit. A second version, the missile upper stage with new nuclear warheads, will be commissioned from 2015.¹⁶⁹

EADS also holds a 37.5 per cent share in MBDA, a joint venture with BAE Systems and Finmeccanica. MBDA produced over 3,000 missiles in 2010.¹⁷⁰ It builds the ASMPA nuclear missiles for the French air force, which can be launched from the *Mirage* 2000N fighter plane and the new *Rafale* fighter plane.¹⁷¹



Finmeccanica

Company Profile

Finmeccanica, based in Italy, mainly engages in the development and manufacture of helicopters, defence and security electronics, and aeronautics.¹⁷² In the financial year ended 31 December 2010, Finmeccanica generated revenues of €18.7 billion (US\$24.8 billion), resulting in an operating profit of €866 million (US\$1.2 billion) and a net profit of €577 million (US\$766 million).¹⁷³

Nuclear Weapons

Finmeccanica holds a 25 per cent share in MBDA, a joint venture with EADS and BAE Systems. MBDA is a world leader in missiles and missile systems, producing over 3,000 missiles in 2010.¹⁷⁴ MBDA builds the ASMPA nuclear missiles for the French air force, which can be launched from the *Mirage* 2000N fighter plane and the new *Rafale* fighter plane. The manufacturing of the missiles does not include the manufacturing of the nuclear warhead itself, which is done by the government agency *Commissariat á l'energie atomique*. The ASMPA was taken into service in November 2010.¹⁷⁵



GenCorp

Company Profile

GenCorp, based in the United States, is a major technology-based manufacturer divided into two businesses: Easton (real state) and Aerojet (aerospace and defence).¹⁷⁶ In the financial year ended 30 November 2010, GenCorp generated revenues of US\$858 million, resulting in an operating profit of US\$858 million and a net profit of US\$6.8 million.¹⁷⁷

Nuclear Weapons

Aerojet, GenCorp's aerospace and defence company, has been involved in nuclear weapon production for 50 years and claims to be a leader in the design, development and production of US land- and seabased nuclear ballistic missile systems, including Polaris, Minuteman, Peacekeeper and D5.

Aerojet produces solid and liquid propulsion systems for both the US air force's Minuteman III and the navy's D5 Trident nuclear missile systems.¹⁷⁸ The company is also a manufacturer of propulsion control systems for critical missile defence applications supporting the US Missile Defense Agency.¹⁷⁹

According to the Tennessee Department of Health, Aerojet Ordnance Tennessee, a subsidiary of Aerojet, is a leading producer of depleted uranium and tungsten munitions for the US military.¹⁸⁰

GENCORP

General Dynamics

Company Profile

General Dynamics, based in the United States, provides business aviation, land and expeditionary combat systems, armaments and munitions, shipbuilding and marine systems, and information systems, technologies, and mission-critical information systems and technology.¹⁸¹

In the financial year ended 31 December 2010, General Dynamics generated revenues of US\$32.5 billion, resulting in an operating profit of US\$2.6 billion and a net profit of US\$2.6 billion.¹⁸²

Nuclear Weapons

General Dynamics Electric Boat, a subsidiary of General Dynamics, built the *Ohio*-class nuclear submarines of the US navy, which are equipped with Trident missiles.¹⁸³ As the website of General Dynamics Electric Boat claims, these submarines are "the most powerful ships ever put to sea", referring to the nuclear explosive power aboard the submarines.¹⁸⁴

In 2011 General Dynamics Electric Boat was awarded a US\$429-million contract modification by the US navy to provide maintenance, engineering and technical support for nuclear submarines.¹⁸⁵ Other nuclear-related contracts awarded in 2011 by the US navy were a US\$16.6-million contract to support nuclear aircraft carrier repair work at Norfolk Naval Shipyard¹⁸⁶ and a US\$16.6-million contract to support nuclear aircraft carrier repair work there.¹⁸⁷

Since 2005 General Dynamics' Advanced Information Systems has been involved in a project with partners Honeywell International and Raytheon to stretch the lifecycle of the guidance systems of the Trident II D5 nuclear missiles of the US navy.¹⁸⁸

GENERAL DYNAMICS

Honeywell International

Company Profile

Honeywell International, based in the United States, operates as a diversified technology and manufacturing company. The company's business units are aerospace, automation and control solutions, transportation systems and specialty materials.¹⁸⁹ In the financial year ended 31 December 2010, Honeywell International generated revenues of US\$33.4 billion, resulting in an operating profit of US\$2.4 billion and a net profit of US\$2 billion.¹⁹⁰

Nuclear Weapons

Honeywell Federal Manufacturing & Technologies manages and operates the Kansas City Plant, a facility of the National Nuclear Security Administration, where around 85 per cent of the non-nuclear components for US nuclear weapons are produced, according to the organization Nuclear Watch.¹⁹¹

Honeywell Technology Solutions Inc (HTSI) has a contract with the US government's Defense Threat Reduction Agency. As the instrumentation support contractor, HTSI is responsible for maintaining an inventory of instrumentation to monitor and record data associated with the testing on the White Sands Missile Range in New Mexico of simulated nuclear weapons and conventional weapons.¹⁹²

Honeywell is also involved, with General Dynamics and Raytheon, in a project that aims to stretch the lifecycle of the Trident II D5 nuclear missiles of the US navy.¹⁹³ In December 2009 this contract was extended. Honeywell International is the most important subcontractor and will produce components for integrated circuits at its factory in Plymouth, the United Kingdom.¹⁹⁴

Jacobs Engineering

Company Profile

Jacobs Engineering Group, based in the United States, provides professional, technical and construction services. Among its primary markets are aerospace and defence, energy, oil and gas and infrastructure.¹⁹⁵ In the financial year ended 1 October 2010, Jacobs Engineering generated revenues of US\$9.9 billion, resulting in an operating profit of US\$487 million and a net profit of US\$312 million.¹⁹⁶

Nuclear Weapons

In December 2008, Jacobs Engineering acquired a one-third share in the joint venture AWE-ML, the company that manages the United Kingdom's Atomic Weapons Establishment (AWE). The AWE provides and maintains the warheads for the country's Trident nuclear arsenal. Trident is a submarine-launched, intercontinental ballistic missile system carried by the fleet of *Vanguard*-class submarines.

The other partners in the joint venture are Lockheed Martin and Serco. AWE's involvement with Trident missiles covers the entire life cycle, from initial concept to assessment, design, component manufacture and assembly, in-service support and decommissioning and disposal.¹⁹⁷ AWE-ML has a quarter-century-long non-revocable contract, revised in 2003, to run the AWE.¹⁹⁸



Honeywell

💶 Larsen & Toubro

Company Profile

Larsen & Toubro, based in India, is a technology, engineering, construction and manufacturing company. It has nine operating divisions, among which are heavy engineering, construction and power.¹⁹⁹ In the financial year ended 31 March 2011, Larsen & Toubro generated revenues Rp 515.5 billion (US\$11.3 billion), resulting in an operating profit of Rp 65.3 billion (US\$1.4 billion) and a net profit of Rp 44.6 billion (US\$977 million).²⁰⁰

Nuclear Weapons

As one of India's major construction companies, Larsen & Toubro is involved in designing and building the Advanced Technology Vessel, which is the future nuclear-armed submarine of the Indian navy. The project, with a total value of US\$3 billion, was initiated in 1970 and its objective was to build five nuclear submarines, each equipped with a dozen K-15 nuclear missiles. In 2008 the company started construction of the second submarine.²⁰¹ In addition, L&T tested a launch system built for India's nuclear missiles with a range of 300 km.²⁰²



Lockheed Martin

Company Profile

Lockheed Martin, based in the United States, focuses on aeronautics, space systems, electronic systems and information systems.²⁰³ In the financial year ended 31 December 2010, it generated revenues of US\$45.8 billion, resulting in an operating profit of US\$3.8 billion and a net profit of US\$2.9 billion.²⁰⁴

Nuclear Weapons

Lockheed Martin produces a wide variety of conventional weapons as well as nuclear weapons for both the United States and the United Kingdom.²⁰⁵ It is responsible for the construction of the Trident II D5 nuclear missiles for the US *Ohio*-class submarines and the British *Vanguard*-class submarines.²⁰⁶ The United States plans on keeping the Trident II missiles in service until 2042.²⁰⁷

Lockheed Martin also has a one-third share in the joint venture AWE-ML, the company that manages the United Kingdom's Atomic Weapons Establishment (AWE). The AWE provides and maintains the warheads for the nuclear-armed *Vanguard*-class submarines. The other partners in the joint venture are Jacobs Engineering and Serco.²⁰⁸ AWE-ML has a 25-year non-revocable contract, revised in 2003, to run the AWE programme.²⁰⁹

As a member of the Northrop Grumman-led ICBM Prime Integration Team, Lockheed Martin is involved in the production and maintenance of the Minuteman III intercontinental ballistic missiles.²¹⁰ Lockheed Martin is responsible for the weapons systems, control systems and re-entry systems.²¹¹

In March 2011, the company received a US\$12.5million contract for the refurbishment of re-entry vehicle arming and fusing assemblies for the Minuteman III missiles. According to the latest plans, these nuclear missiles will continue to be part of the US nuclear defence programme until at least 2030.²¹²

Lockheed Martin in May 2009 acquired the Scottish company Imes Strategic Support, a supplier of key components for British nuclear weaponry.²¹³



Northrop Grumman

Company Profile

Northrop Grumman Corporation, based in the United States, provides products, services and solutions in the aerospace, electronics, information systems and shipbuilding sectors.²¹⁴ In the financial year ended 31 December 2010, Northrop Grumman generated revenues of US\$34.8 billion, resulting in an operating profit of US\$3.1 billion and a net profit of US\$2.1 billion.²¹⁵

Nuclear Weapons

After acquiring TRW Inc in 2002, Northrop Grumman inherited the leadership over the ICBM Prime Integration Team. This project was initiated in 1997 and has a value of US\$6.5 billion. Northrop Grumman and its partners, including Boeing and Lockheed Martin, are responsible for the production and maintenance of the Minuteman III nuclear intercontinental ballistic ground-to-ground missiles.²¹⁶ Approximately 500 missiles of the Minuteman III missiles form the core of the land-based US nuclear arsenal.²¹⁷ After 2012, the maintenance project is likely to be extended, as the US air force plans to keep the Minuteman III as part of the US nuclear defence programme until at least 2030.²¹⁸

🗮 Redhall Group

Company Profile

The Redhall Group, based in the United Kingdom, consists of several niche engineering service businesses operating internationally in the defence, energy and processing plant sectors.²¹⁹ In the financial year ended 30 September 2010, Redhall Group generated revenues of \pounds 144.7 million (US\$225.6 million), resulting in an operating profit of \pounds 4.5 million (US\$7.1 million) and a net profit of \pounds 3.6 million (US\$5.6 million).²²⁰

Nuclear Weapons

Redhall Group operates within the nuclear weapons industry via contracts with the British Ministry of Defence to carry out mechanical and electrical engineering activities at the Atomic Weapons Establishments (AWE).²²¹ The group has been carrying out work at AWE Aldermaston – the United Kingdom's nuclear weapons factory – for over 12 years.²²² It is also a contractor of AWE Burghfield, the United Kingdom's facility for assembling and disassembling nuclear warheads.²²³

Rechall Group plc



Rolls-Royce

Company Profile

Rolls-Royce plc, based in the United Kingdom, provides integrated power systems for use on land, at sea and in the air. The company's main business divisions are civil aerospace, defence aerospace, marine and energy.²²⁴ The manufacturer of Rolls-Royce automobiles is now a subsidiary of BMW and not part of Rolls-Royce plc. In the financial year ended 31 December 2010, Rolls-Royce generated revenues of £11.1 billion (US\$17.1 billion), resulting in an operating profit of £702 million (US\$1.1 billion) and a net profit of £543 million (US\$839 million).²²⁵

Nuclear Weapons

Together with Babcock Marine and BAE Systems, Rolls-Royce started the Future Submarines (FSM) project in 2007. The objective of this project is to develop *Successor*, a new class of nuclear-armed submarine for the British navy, which will replace the present Trident-armed *Vanguard*-class submarines.²²⁶

Rolls-Royce has also been involved with the development and maintenance of the current fleet of submarines. It was initially responsible for developing its nuclear-powered propulsion system. In 2007 Rolls-Royce was awarded a 10-year contract worth $\pounds 1$ billion to support power plant systems for the British fleet of nuclear-powered submarines, which includes the nuclear-armed *Vanguard* class.²²⁷



Safran

Company Profile

Safran, based in France, is a high-technology group that focuses on the three core businesses: aerospace, defence and security.²²⁸ In the financial year ended 31 December 2010, Safran generated revenues of €11 billion (US\$14.6 billion), resulting in an operating profit of €878 million (US\$1.2 billion) and a net profit of €508 million (US\$675 million).²²⁹

Nuclear Weapons

Safran is involved, with EADS, Thales and others, in a contract concluded in December 2004 to build the new M51 nuclear missile for the new French submarines, with an estimated value of €3 billion. EADS's subsidiary Astrium is the lead contractor, whereas Safran, SNPE, DCN and Thales are the main subcontractors.²³⁰ The M51 features multiple warheads, with far greater payload mass and volume including warheads and penetration aids, than the M4. It also offers longer range than the M4, enabling submarines to expand their patrol zones.

The nuclear submarine *Le Terrible* has been equipped with the M51 since late 2010. The missile will also enter operational service on board the other French new-generation submarines, *Triomphant* and *Téméraire*, after retrofit. A second version, the missile upper stage with new nuclear warheads, will be commissioned from 2015.²³¹ Safran's subsidiary Snecma is a preferred supplier of the propulsion system for the M51 missile project. Sagem, another subsidiary of Safran, developed the navigation systems for the M51, which will improve the accuracy of the missile.²³²



😹 Serco

Company Profile

Serco Group, based in the United Kingdom, operates as a service company to governments and commercial customers worldwide. Its main business areas in public service are health, education, transport, science and defence, while private-sector customers are leading companies operating in various markets.²³³ In the financial year ended 31 December 2010, Serco generated revenues of £4.3 billion (US\$6.7 billion), resulting in an operating profit of £214 million (US\$331 million) and a net profit of £157 million (US\$243 million).²³⁴

Nuclear Weapons

Serco has a one-third share in the joint venture AWE-ML, the company that manages the United Kingdom's Atomic Weapons Establishment (AWE). The AWE provides and maintains the warheads for the country's Trident nuclear arsenal. Trident is a submarine-launched, intercontinental ballistic nuclear missile system, carried by *Vanguard*-class submarines.

The other partners in the joint venture are Lockheed Martin and the Jacobs Engineering. AWE's involvement with Trident missiles covers the entire life cycle from initial concept to assessment, design, component manufacture and assembly, in-service support, and decommissioning and disposal.²³⁵ AWE-ML has a 25-year non-revocable contract, revised in 2003, to run the AWE programme.²³⁶

serco

Thales

Company Profile

Thales, based in France, provides information systems for the defence and security, aerospace and transportation markets. The company's main business divisions are aerospace, defence and security.²³⁷ In the financial year ended 31 December 2010, Thales generated revenues of €13.1 billion (US\$17.4 billion), resulting in an operating loss of €205 million (US\$273 million) and a net loss of €108 million (US\$143 million).²³⁸

Nuclear Weapons

Thales is involved, with EADS, Safran and others, in a contract concluded in December 2004 to build the new M51 nuclear missile for the new French submarines, with an estimated value of €3 billion. EADS's subsidiary Astrium is the lead contractor, whereas Safran, SNPE, DCN and Thales are the main subcontractors.²³⁹ The M51 features multiple warheads, with far greater payload mass and volume including warheads and penetration aids, than the M4. It also offers longer range than the M4, enabling submarines to expand their patrol zones. The nuclear submarine Le Terrible has been equipped with the M51 since late 2010. The missile will also enter operational service on board the other French new-generation submarines, Triomphant and Téméraire, after retrofit. A second version, the missile upper stage with new nuclear warheads, will be commissioned from 2015.240

THALES

BOX 11

Case Study: General Electric – A Former Nuclear Weapons Producer

Can the people take on corporate giants and win? The mass boycott of General Electric (GE) in the 1980s was successful in putting pressure on the company to end its decadeslong involvement in the nuclear weapons industry. **Kelle Louaillier**, the executive director of Corporate Accountability International (formerly Infact), explains how it was done.



Photo: Corporate Accountability International

ICAN: What involvement did GE have in nuclear weapons production when you initiated your campaign?

Kelle Louaillier (KL): In 1984 in the United States, thousands of companies were involved in some way in producing parts for nuclear weapons systems. GE produced more parts to more major nuclear weapons systems than any other corporation. GE was involved in the promotion of nuclear weapons to the government and in production since day one, with its role in the Manhattan Project.

Specifically, GE was responsible for the critical components, including, for example, the neutron "trigger" for every US nuclear bomb. Notably, before becoming president, Ronald Regan was a spokesman for GE.

ICAN: How did you put pressure on GE to end its involvement in nuclear weapons production?

KL: Corporate Accountability International, then called Infact, organized an international grassroots campaign, including a consumer boycott of all General Electric products and services.

We used the full range of tactics, from engaging more than 500 campaign-endorsing allied organizations to calling on medical professionals to stop purchasing expensive life-saving medical equipment from GE. We produced a short documentary film, *Deadly Deception*, that was shown in movie theatres and on TV stations in more than 40 nations.

Our organizing strategies focused on key corporate vulnerabilities: exposing the truth behind GE's corporate image; creating internal conditions demanding the company move out of the nuclear weapons business, impacting sales; altering the cost-benefit ratio for GE to be in the nuclear weapons business; and more.

ICAN: How did people respond? Was there any public resistance to your campaign?

KL: Once the public began to understand industry's role in the nuclear weapons build-up – both creating the demand for and directly providing the weapons – the campaign was met with overwhelming public support. For the campaign's kickoff, events were held in 36 cities in 26 states, with 18 million people participating.

By 1990 four million people in the United States alone were boycotting GE. Campaign activities continued in all 50 US states, across Canada and into Western Europe.

In 1989, three years into the boycott and five years into the overall campaign, GE spent four times more on brand advertising – *not* product advertising – to defend its brand image than in the past four years combined.

ICAN: When and why did GE finally decide to end its involvement in nuclear weapons production?

KL: In April of 1993, General Electric completed its move out of the nuclear weapons business. GE announced this move as a "business decision" – underscoring a key approach to Corporate Accountability International's campaigns. By altering the cost–benefit ratio (which takes years when engaging a multi-billiondollar transnational corporation), we can all make change real.

Our international boycott of GE products cost the company over \$50 million in lost medical equipment sales. Major retail stores including Safeway and Target began stocking light bulbs made by other companies.

When our campaign began, 50,000 nuclear warheads were on constant alert and the United States was building five nuclear bombs a day. At the close of the campaign, no nuclear bombs were in production on US soil. Allied organizations continue to work toward the elimination of weapons of mass destruction.

ICAN: What advice do you have for campaigners wanting to challenge the nuclear weapons complex?

KL: This isn't a numbers game: big business will always have more resources than campaigners. What we have at the core of it all is righteous truth that puts people's lives (public health and human rights), environmental safety, and democracy ahead of corporate greed.

Think and organize with boldness: the stakes are high enough to ask people to do what might seem impossible. Be smart, be strategic, have a laser focus, be clear about what you are campaigning to achieve – and let your adversary know what is required of them. Dig in for the long haul. Keep your friends close and your adversaries closer ... there are people within these corporations making decisions: know them, expose them, and call on them to change. With enough pressure, they will.