



The exclusion of nuclear weapons producers

Ever since the GPFG ethical guidelines¹ were established more than 10 years ago, the production of key nuclear weapons components has been a basis for excluding companies from the fund. There has been a trend towards in part outsourcing to companies the operations in state-owned facilities for the production, upgrading, testing and maintenance of nuclear weapons. The Council's practice relating to the operationalisation of the nuclear weapons criterion over the past decade, including the limiting of the criterion's scope, is described below.

In brief about nuclear weapons

According to the Non-Proliferation Treaty, nuclear weapons are weapons of mass destruction that most countries are prohibited from possessing.² The USA, UK, France, Russia and China («the P5 countries») are for historical reasons exempt from this prohibition. It is also regarded as certain that India, Pakistan, Israel and North Korea have developed nuclear weapons. South Africa is the only country that has completely disbanded the nuclear weapons it had developed.³ Previously, other countries have also started nuclear weapons programmes that have not been completed.

The production of nuclear weapons requires a number of input factors. Manufacturing a sufficient volume of *fissile material* (highly enriched uranium or plutonium) is very resource-demanding. Minerals containing uranium are extracted in mining operations but must be processed in order to be used in nuclear weapons, either by producing the synthetic element plutonium in nuclear reactors based on uranium, or through enriching.⁴ Uranium used to produce nuclear power must also be enriched, but to a lower grade than when used for weapons purposes. Non-P5 countries that have nuclear weapons have therefore been able to develop these in parallel with civilian nuclear power programmes.

It is primarily in the USA and to some extent also in the UK, France and India that listed companies play any role in nuclear weapons production, given the criteria limitations practised by the Council. This is also reflected in the geographical locations of the companies that are excluded from the GPFG due to the nuclear weapons criterion.

The nuclear weapons criterion in the GPFG ethical guidelines

Nuclear weapons are different from the other types of weapons covered by the GPFG guidelines in that they are much more complex to make and form part of large weapons systems. It is necessary to limit the scope of the guidelines with regard to both *product* and *activity*.

Section 2a of the guidelines states:

"The Fund shall not be invested in companies which themselves or through entities they control, produce

weapons that violate fundamental humanitarian principles through their normal use."

The preparatory works (Government White Paper (NOU) 2003:22) and later the Revised National Budget 2004 provide a list of the types of weapons meant here, including nuclear weapons, and the Ministry of Finance has based later reports to the Norwegian parliament on this list. The preparatory works assumed there would be a very limited number of exclusions due to nuclear weapons:

*"As far as the committee knows, there is currently no production of nuclear weapons in either state-owned defence companies or private companies. Key components of such weapons are apparently no longer manufactured by state-owned or private defence companies."*⁵

Nonetheless, the preparatory works stated that the production of nuclear weapons and their key components was to be a basis for exclusion. The type of products and other input factors that this is to cover, must therefore be assessed in greater detail.

For the Council, the operationalisation of the nuclear weapons criterion provides three main challenges:

1. Practicable limits for the criterion
2. Consistency in the way it is practised – i.e. treat similar cases in the same way
3. Access to information

Limits for the criterion – what is included in the production of nuclear weapons and their key components?

Put simply, nuclear weapons can be said to consist of a *warhead* and a *delivery system* that brings the warhead to the target - for example a missile. The delivery system may be more or less integrated into a *transport system*, such as a vehicle, aircraft, ship or submarine.

Apart from the production of the warhead itself, several types of operations may be covered by the nuclear weapons criterion in the GPFG guidelines. Over the past decade and especially in the USA, there has been a trend towards in part outsourcing operations in state-owned facilities for producing, upgrad-

ing, testing and maintaining nuclear weapons to companies. Deliveries of various types of services to such facilities may be a basis for excluding a company from the GPFG.

The guidelines' preparatory works stipulate some limits for the nuclear weapons criterion but these are not detailed in all areas, and in addition no further instructions have been given since the preparatory works in 2003. The Council discussed criterion limits in its first recommendation to exclude nuclear weapons companies (2005).⁶ The limits that this recommendation proposed have largely been practised during the past 10 years. This practice is described below.

Several purposes/"dual use"

Operations or products whose only purpose is to form part of a nuclear weapon may basically provide a basis for exclusion. This is in accordance with the guidelines' preparatory works⁷ and rules out, for example, the exclusion of delivery systems with several purposes, such as missiles that can carry both conventional warheads and nuclear weapons.

The interpretation of "key components"

The preparatory works clearly state that it would be going too far to try to exclude all manufacturers of components: "*there is no point in affecting a screw manufacturer, for example*", but that "*the production of key components must be said to be covered by the definition*", without providing any specific examples of these.

Which of the components should in this context be regarded as *key*? This is not obvious, perhaps apart from the actual warhead and fissile material.

Nuclear weapons consist of thousands of components if one looks at each individual part. The Council has no overview of these, and detailed information on individual components is not normally available.

It must be assumed that all the components in a nuclear weapon fulfil a necessary function in some way or other, or they would not have been part of the weapon. Hence, it is difficult to base a definition of *key components* strictly on necessity. In addition, it must be assumed that very many of the components in reality are more or less adapted to their purpose

and are therefore not covered by *dual use*. However, excluding all manufacturers of adapted components would be going too far, as the preparatory work delimits the exclusion of all manufacturers of small components.

The Council has approached this issue by looking at *main components* and *subcomponents* of these, in practice limited to:

- Warheads and fissile material
- Delivery systems in the form of missiles whose only function is to deliver nuclear weapons, including propulsion systems for these

Under "*missiles*", the Council has recommended excluding companies that are responsible for the end production of the missiles and the production of the engines, but not all the subcontractors. In its assessments, the Council has not looked at the level below main components, such as the production of rocket-engine parts.

In addition, the Council has not recommended excluding companies that deliver other components that could well be regarded as key components of delivery systems, such as guidance, navigation and communication systems. This is based on practical grounds rather than reasons of principle; it is too demanding to assess such systems with regard to, for example, their level of adaptation to their purpose, and it is difficult to draw practicable system limits. The access to information on such systems is also very limited.

Limit on activities – what does "production" entail?

The actual concept of "*production*" must also be interpreted. Are the maintenance and upgrading of nuclear weapons to be equated with initial production? The preparatory works do not refer to this question, but the Council has based its decisions on this interpretation. The initial production of nuclear weapons, especially fissile material, is very resource-demanding and continuous new production does not take place anywhere.⁸ Nuclear weapons systems are kept operational over several decades through continuous upgrades, maintenance and non-destructive testing, and the Council has previously equated such operations with initial production. This forms the basis

for excluding several of the companies according to the nuclear weapons criterion.

Delivery system versus transport system

In its decisions, the Council has distinguished between delivery systems and transport systems: the production of *delivery systems* may be a basis for exclusion if the system has no other function than to deliver nuclear weapons. (In this context, "deliver" means to bring the nuclear weapon's warhead to its intended target.) The production of *transport systems* has not been regarded as a ground for exclusion.

The preparatory works' argument for transport systems not being covered by the criterion is as follows:

*"In the committee's view, it will, for example, not be very judicious to say that F-16 aircraft should be affected by a prohibition against nuclear weapons because these are built to be able to carry nuclear weapons. Norway has chosen to buy such aircraft for completely different reasons."*⁹

Many types of transport systems will in any case not be covered by the criterion because of dual use, which is the real reason stated in the above example. However, a question can be raised regarding submarines, whose primary purpose is to carry nuclear missiles. This is a transport-system form that can hardly be said to be covered by *dual use*. This question is relevant as there are several GPFG companies involved in building and upgrading such vessels – for the USA, UK, France and India – and in delivering components. The preparatory work does not address with this issue. The practice in this area has been that transport systems in general are not covered by the criterion as

ships, vehicles, aircraft and submarines – irrespective of their purpose – are not covered by a reasonable understanding of the concept of "nuclear weapons and their key components", as stated in the preparatory works.

Access to information

The Dutch advisory company Sustainalytics provides analysis for the Council on the product-based exclusions. The Council receives quarterly reports on companies in the fund whose operations may meet the criteria, and if there is a basis for the continued exclusion of companies. Sustainalytics often reports on 20–30 companies that may be covered by the nuclear weapon criterion. Most of these have operations that the Council regards as outside the scope for this criterion. Many of them are linked to various delivery platforms, for example the aforementioned submarines.

Recommendations to exclude companies are only based on publicly available information. Normal sources of information are press releases in connection with new contracts and other information provided by the companies. There is generally limited available information and that which exists is usually not very specific. When contacted, companies do not normally wish to comment or provide any detailed account of operations relating to nuclear weapons.

In addition, it is not realistic for the Council to manage to obtain information on a company's possible participation in nuclear weapons programmes that contravene the Non-Proliferation Treaty.

Excluded companies

A total of 15 companies have been excluded under the nuclear weapons criterion. At present, 12 companies are excluded.

Company	Excluded since	Basis for the recommendation to exclude	Comments
Lockheed Martin Corp.	2013	The company was excluded from 2005-2013 due to its production of cluster munitions. When this exclusion was revoked, the basis for exclusion was changed to nuclear weapons. The reason for this is its links with state-owned UK company AWE (<i>Atomic Weapons Establishment</i>), which is responsible for developing, manufacturing and maintaining the UK's nuclear weapons warheads. AWE is owned by the UK Ministry of Defence, but the physical operations are run by AWE Management Ltd (AWE ML), a joint venture in which Lockheed Martin owns a third. The other partners in AWE ML are Serco Group Plc. and Jacobs Engineering Group Inc. ¹⁰	
Orbital ATK Inc. (Previously Alliant Techsystems Inc.)	2013	The company is responsible for upgrading the rocket engines on the intercontinental ballistic missile Minuteman III ICBM and manufactures the rocket engines for the Trident II (D5) nuclear missile, which is intended to be launched from submarines. ¹¹	1
BWX Technologies Inc. (Previously The Babcock & Wilcox Co.)	2013	The company owns and runs the USA's largest facility for manufacturing highly enriched uranium and is responsible for the operations of the Y-12 National Security Complex and Pantex facilities. The Y-12 facility produces fissile material for use in nuclear weapons and maintains and upgrades nuclear weapons' warheads. Pantex is a facility for storing, upgrading and maintaining the USA's nuclear weapons' warheads. An important part of the operations consists of extending the warheads' lifetime. ¹²	2
Jacobs Engineering Group Inc.	2013	Refer to the basis for excluding Lockheed Martin Corp. ¹³	
Serco Group Plc.	2007	Refer to the basis for excluding Lockheed Martin Corp. ¹⁴	
Aerojet Rocketdyne Holdings, Inc. (Previously GenCorp Inc.)	2007	The company manufactures engines for the Minuteman III and D5 Trident nuclear missiles. ¹⁵	
Safran SA	2005	The company supplies engines to the French M51 missiles whose only function is to carry nuclear weapons.	3
Airbus Group N.V. (Previously EADS)	2005	Through its subsidiary Honeywell Technology Solutions Inc., this company is responsible for repairing, developing, calibrating, operating and maintaining measuring instruments, and for registering data obtained by simulating nuclear weapons detonations.	3
Airbus Group Finance B.V.	2005	This is the Airbus Group's financing company.	
Honeywell International Inc.	2005	The company has through its subsidiary Honeywell Technology solutions Inc. the responsibility for repairing, developing, calibrating, operations and maintenance of instruments for recording of data in simulated nuclear detonations.	
Northrop Grumman Corp.	2005	This company is a contractor that maintains and upgrades the Minuteman III missiles. The basis for the exclusion originally also included operations linked to the MX missiles. These have now been discontinued, but the Minuteman III remains.	
Boeing Co.	2005	This is the main contractor that upgrades and maintains the Minuteman III ICBM. ¹⁶	4

Comments:

- 1) In addition to the original basis for exclusion, the company is part of a joint venture (JV) with Lockheed Martin. The JV is the operator of the Pantex and Y-12 facilities referred to under BWX Technologies Inc.
- 2) The operations which formed the original basis for exclusion seem to have been partially wound up. The company now takes part in a joint venture (National Security Technologies LLC) with, among others, Northrop Grumman and ACOM, with the objective of running the Nevada National Security Site (NNSS), where among other things warheads are assembled, dismantled and tested.
- 3) The exclusions of Safran and Airbus are linked: Safran supplies rocket engines to the M51 missiles manufactured by Airbus.
- 4) The contracts for this which formed the basis of the original recommendation to exclude the company (2005), have expired. However, Boeing has entered into new contracts, among other things for the maintenance and upgrading of the Trident II missile for the UK (June 2015).

Although changes have taken place in many of the companies since they were excluded, there is currently no basis for recommending the revocation of the exclusion of any of the companies excluded under the nuclear weapons criterion.

The Council will maintain its established limits of the nuclear weapons criterion. The monitoring of the portfolio and examining companies to find out if they meet the nuclear weapons criterion is continually ongoing and it may be relevant to recommend the exclusion of additional companies.

Notes

1. Guidelines for observation and exclusion of companies from the Government Pension Fund Global (GPF), <https://lovdata.no/dokument/INS/forskrift/2014-12-18-1793?q=retningslinjer+++pensjonsfond+++utland>.
2. The Non-Proliferation Treaty, NPT, formally the *Treaty on the Non-Proliferation of Nuclear Weapons*, 1968, <http://www.un.org/disarmament/WMD/Nuclear/NPT.shtml>.
3. NPT covers 190 countries. India, Pakistan and Israel have not joined the NPT. North Korea became a party to the NPT in 1985, but pulled out in 2003. South Africa joined the NPT after destroying its nuclear weapons in 1991. Iran joined the NPT in 1968, but has been accused of having operations that contravene the treaty.
4. In nature, uranium occurs in various isotopes, i.e. variants of the element with different numbers of neutrons in the atomic nucleus. The fissile isotope U_{235} comprises 0.7% of natural uranium. When enriched, the concentration of U_{235} is increased to 3-4% for use in nuclear power plants and to more than 90% for use in nuclear weapons.
5. Government White Paper ((NOU) 2003: 22, Management for the future – draft ethical guidelines for the Government Pension Fund Global (Forvaltning for fremtiden — Forslag til etiske retningslinjer for Statens petroleumsfond), annex 9, item 4.3 (p. 144), <https://www.regjeringen.no/no/no/dokumenter/nou-2003-22/id118914/> (Norwegian language only).
6. Recommendation dated 19 September 2005 regarding the exclusion of companies that manufacture key components of nuclear weapons: <http://etikkradet.no/en/tilradninger-og-dokumenter/recommendations/nuclear-weapons/recommendation-of-september-19-2005-on-the-exclusion-of-companies-that-are-involved-in-the-production-of-nuclear-weapons/>
7. This is an antithetic interpretation of Government White Paper (NOU) 2003:22, annex 9, item 4.6: “*The production of components that can meet other, legitimate objectives (multi-use goods) should in the committee’s opinion not form grounds for exclusion.*” (Translated here for information purposes.)
8. For example: a large part of the USA’s currently around 7,000 nuclear weapons were originally manufactured in the 1960s and have since been upgraded several times. Newer nuclear weapons that were developed in the 1980s have been destroyed in accordance with disarmament treaties. At the most, the USA had in excess of 35,000 nuclear weapons (warheads), while the Soviet Union had even more. Today, the USA and Russia have approximately the same number. The other P5 countries each have around 200. Non-P5 countries are assumed to have fewer than 100 each.
9. Government White Paper (NOU) 2003:22, annex 9, item 4.6.
10. Recommendation 2013: http://etikkradet.no/files/2014/12/Tilrad_LM_ENG_2013.pdf.
11. Recommendation 2013: http://etikkradet.no/files/2014/12/Tilrad_ATK_ENG_2013.pdf.
12. Recommendation 2013: http://etikkradet.no/files/2014/12/babcock_wilcox_jacobs_eng.pdf.
13. Recommendation 2013: http://etikkradet.no/files/2014/12/babcock_wilcox_jacobs_eng.pdf.
14. Recommendation 2007: <https://nettsteder.regjeringen.no/etikkradet/files/2014/12/SercoGroupEnglish.pdf>.
15. Recommendation 2007: <http://etikkradet.no/files/2014/12/GenCorp-English.pdf>.
16. Recommendation 2005: <http://etikkradet.no/en/tilradninger-og-dokumenter/recommendations/nuclear-weapons/recommendation-of-september-19-2005-on-the-exclusion-of-companies-that-are-involved-in-the-production-of-nuclear-weapons/>.