EN

Case No COMP/M.4153 - TOSHIBA / WESTINGHOUSE

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REGULATION (EC) No 139/2004
MERGER PROCEDURE

Article 6(2) NON-OPPOSITION
Date: 19/09/2006

In electronic form on the EUR-Lex website under document number 32006M4153

Office for Official Publications of the European Communities
L-2985 Luxembourg

COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 19/09/2006

SG-Greffe(2006) D/205227

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PUBLIC VERSION

MERGER PROCEDURE
ARTICLE 6(1)(b) and 6(2)
DECISION

To the notifying party

Dear Sir/Madam,

Subject: **Case No COMP/M.4153 – TOSHIBA / WESTINGHOUSE**
Notification of 31 July 2006 pursuant to Article 4 of Council Regulation No 139/2004[1]

1. On 31 July 2006, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 on the control of concentrations between undertakings (the "Merger Regulation") by which the undertaking Toshiba Corporation ("Toshiba", Japan) acquires within the meaning of Article 3(1)(b) of the Council Regulation control of the whole of the undertakings Westinghouse Electric UK Limited ("Westinghouse UK", United Kingdom) and BNFL USA Group Inc ("BNFL US", USA), both forming the Westinghouse group ("Westinghouse"), by way of purchase of shares.

I. THE PARTIES

[1] OJ L 24, 29.1.2004 p. 1.

2. *Toshiba* is active in the field of digital products, electronic devices and components, home appliances, power generation equipment, transportation equipment, telecommunication systems and medical systems. It is has also business related to nuclear power plants ("NPPs"). These activities are in the focus of the proposed concentration. Toshiba is active in the design and construction of nuclear power plants, the provision of safety and operational instrumentation and control systems ("I&C") and nuclear services. Toshiba also holds a minority share in Global Nuclear Fuel ("GNF"), a joint venture with General Electric Co. ("GE", USA) and Hitachi Ltd. ("Hitachi", Japan), which is also active in the supply of nuclear fuel assemblies[2]. The majority of turnover achieved from Toshiba's activities in the field of nuclear technology is realised in Japan and to some extent in the Asian region.

3. *Westinghouse* is active in the design and construction of NPPs, the provision of safety and operational instrumentation and control systems ("I&C"), of nuclear services and in the provision of nuclear fuel to utilities that operate nuclear power plants. Westinghouse operates in the U.S., in Europe and in certain Asian countries. Westinghouse is currently held by British Nuclear Fuels ("BNFL") and controlled by the British government. For the purpose of this decision Toshiba and Westinghouse are referred to as the "Notifying Parties" or simply the "Parties".

II. THE OPERATION

4. According to the Purchase Sale Agreement of 6 February 2006 between Toshiba and BNFL, Toshiba will acquire the majority of the issued and outstanding shares of Westinghouse UK and BNFL US, both forming Westinghouse, through two acquisition vehicles. In the original Purchase Sale Agreement it was left open whether Toshiba would solely acquire Westinghouse or would involve other investors as minority shareholders.

5. On 25 August 2006, Toshiba came to an agreement with the Shaw group Inc. ("Shaw", US) that provides that Shaw will acquire 20% of Westinghouse's share capital. On 31 August 2006, Toshiba came to a similar agreement with Ishikawajima-Harima Heavy Industries Co. Ltd. ("IHI", Japan) pursuant to which IHI will acquire 3% of Westinghouse's share capital. Toshiba will therefore still hold [70-80]% of the shares in Westinghouse after the transaction. According to the agreements submitted to the Commission, none of the two co-investors will have a controlling stake in Westinghouse, since neither Shaw nor IHI will be granted rights that confer decisive influence on the composition, voting or decisions of Westinghouse's organs to them.

III. CONCENTRATION

6. Since the participation of Shaw and IHI will not confer control to them, Toshiba will acquire sole control over Westinghouse. The proposed operation therefore constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

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[2] Toshiba claims that its shares in GNF and in another joint venture between GNF and the Spanish company ENUSA (GENUSA) are non-controlling shares. See in more detail paragraph 77 et seq.

IV. COMMUNITY DIMENSION

7. The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 billion[3]. Each of them have a Community-wide turnover in excess of EUR 250 million, but they do not achieve more than two-thirds of their aggregate Community-wide turnover within one and the same Member State. The notified operation therefore has a Community dimension.

V. COMPETITIVE ASSESSMENT

1. Relevant product markets

Brief overview of the nuclear industry

8. The nuclear industry is marked by a limited number of suppliers, often supported or owned by national governments. Only a few of these suppliers were active on a world-wide scale in the design and manufacture of NPPs or related services in the past, namely the French company *Areva*[4], the UK government-owned company *Westinghouse* and the GE. Other suppliers were more focused on their respective regions. E.g. Russian and Japanese suppliers, which constructed a number of NPPs in their respective regions (the former Eastern Block and the Asian region); amongst these suppliers are the Russian state-owned company *Atomstroyexport/Skoda*[5] and the Japanese suppliers *Toshiba* and *Mitsubishi*. Finally, there used to be some "domestic" suppliers, delivering NPPs only in their own country, e.g. in South Africa (PBMR (pty) Ltd. of South Africa) or Canada (Atomic Energy of Canada Ltd., "AECL").

9. Some of the more regional suppliers have, however, started to offer and to sell their "domestic" NPP designs to customers in other countries/regions. By way of example, the Canadian supplier AECL has sold four NPPs to Romania, and the Russian *Atomstroyexport* group has sold 5 reactors in India. It should, however, be noted that none of the Asian suppliers has been awarded a contract for the supply of an NPP outside Asia until today.

10. Over the past ten years, few new NPPs have been constructed and few NPP projects were launched world-wide. For instance, only two new NPPs are under construction within the EEA, i.e. Finland and France[6]; other constructions took place in the Asian region. New projects were drawn-up recently in the Asian region, e.g. China and India, and other new projects are considered in the US and the UK. As only few new NPPs are

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3 Turnover calculated in accordance with Article 5(1) of the Merger Regulation and the Commission Notice on the calculation of turnover (OJ C66, 2.3.1998, p25). To the extent that figures include turnover for the period before 1.1.1999, they are calculated on the basis of average ECU exchange rates and translated into EUR on a one-for-one basis.

4 Areva is the result of the merger between Framatome/Siemens and partly Cogéma, on which the Commission gave its approval on 6 December 2000, after an in-depth investigation of the transaction (Case COMP/M.1940 – Framatome/Siemens/Cogéma/JV).

5 The Czech Skoda group was acquired by the Russian Gazprom group in 1994.

6 It should be noted that 4 new NPPs are being built in Romania.

built today, the majority of the NPP suppliers' revenues stems from the supply of "nuclear services" (maintenance and repair of systems and sub-systems) and supply of nuclear fuel[7].

11. The Parties propose to distinguish between four main relevant product markets, namely

(a) the design and manufacture of Nuclear Steam Supply Systems for new NPPs,
(b) the supply of services and equipment to existing NSSS ("nuclear services")
(c) the supply of Instrumentation and Control systems (I&C systems) for NPPs, and
(d) the manufacture and supply of nuclear fuel assemblies ("FAs").

a) Design and manufacture of Nuclear Steam Supply Systems for new NPPs

Nuclear vs. non-nuclear part

12. The Notifying Parties submit that the relevant product market is not the design and manufacture of *entire* NPPs, but that separate product markets should be defined for products for the "nuclear" part of a NPP and for products for the "non-nuclear" part. Following this approach and based on the terminology used by the US National Regulatory Commission[8], the Parties propose to distinguish between the *Nuclear Steam Supply System*[9] ("NSSS") of a NPP on the one hand and the so-called Balance of Plant[10] ("BoP") on the other hand. According to them, *the design and manufacture of NSSS for new NPPs* is a separate product market from the market for the design and supply of BOPs for new NPPs. They argue that both, from a demand and from a supply-side point of view, the design of a NSSS is manifestly different from the BoP, since the ability to supply NSSSs requires specific knowledge and is subject to a large number of nuclear-specific certifications and public authorisations. Accordingly, a separate market for the design of NSSS should be defined.

13. The Commission has in previous cases chosen a slightly different approach, distinguishing between products and services for the *Nuclear Island* ("NI") and the *Conventional Island* (CI). According to the Commission's previous practice, the NI would not only consist of the NSSS, but also of those parts of the BoP which are auxiliary to the NSSS. The CI would therefore be defined more narrowly than the BoP as comprising mainly the turbine generator and its auxiliary systems.

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7 By way of example, nuclear services accounted for [45-65]% of Westinghouse's turnover in 2005; [30-45]% came from the FAs business and [0-10]% from NSSS for new NPPs.

8 http://www.nrc.gov/reading-rm/doc-collections/cfr/part170/part170-0003.html

9 The NSSS consists, according to the Parties, of the reactor vessel and core, reactor coolant and heat transfer system and all related auxiliary components, such as reactor coolant pumps, and systems, including the emergency core cooling system, the decay heat removal system, the chemical volume and control system, and instrumentation and control systems for the NSSS.

10 The BoP includes all the remaining systems, components and structures that comprise a complete NPP and are not included in the NSSS. The BoP includes in particular the turbine generator and other auxiliary systems, including instrumentation and control systems for the BoP.

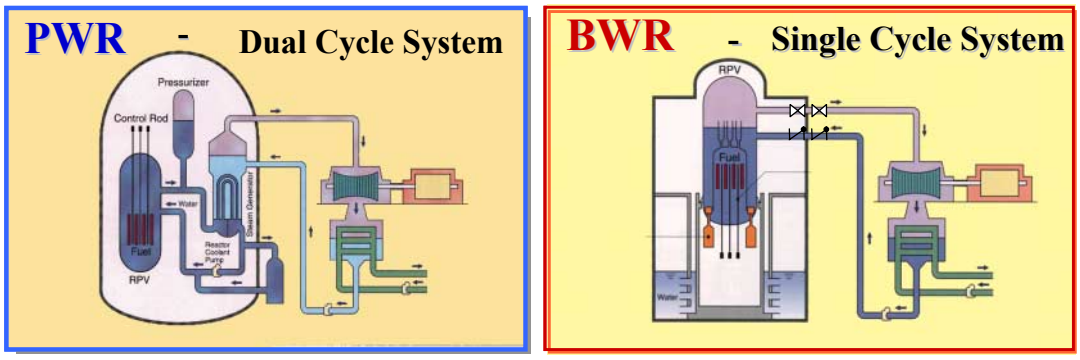
14. The market investigation has shown that market participants are familiar with both segmentations (CI vs. NI and NSSS vs BoP). While customers seem to have a preference for a distinction between NI and CI[11], customers also expressed that they do not see an important difference between both segmentations. The question whether to follow the "broader" concept of the "BoP" or the narrower concept "CI" has no impact on the competitive assessment of the present case, since all affected core products are the same in both cases. For the purpose of the present decision it can therefore be left open which segmentation is more appropriate.

Possible markets according to reactor types

15. The Parties do not propose to further distinguish between *different types of NSSS*. There is a number of different "basic designs" or "types" of reactors, the two main types being Pressurised Water Reactors ("PWRs", the most common reactor type world-wide and in particular in the EEA) and Boiling Water Reactors ("BWRs"). Both types are also referred to as so-called "Light Water Reactors[12]" ("LWRs").

16. The main difference between both LWR types is that in a BWR NSSS there is only one single water circulation loop, while a PWR NSSS has two separate water cycles. In a BWR NSSS, steam is generated using the heat in the reactor core and then sent directly to the turbine system/generator[13]. A PWR NSSS has a primary and a secondary circulation loop: In the first loop, water heated in the reactor core circulates between the reactor and the steam generator. The steam generator produces steam for the turbine in a separate steam cycle[14].

Table 1: Schematic view of a PWR and a BWR NSSS



17. Other main reactor types that might have to be distinguished are gas-cooled reactors ("GCRs"), pressurised heavy water reactors ("PHWRs"), fast breeders and so-called

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11 See question 2 of the questionnaire for customers, sent on 07.08.2006, and question 2 of the questionnaire for competitors, sent on 07.08.2006.

12 A Light Water Reactor is a thermal nuclear reactor that uses ordinary water, also called "light water", as its neutron moderator. This differentiates it from a heavy water reactor, which uses radioactive heavy water as a neutron moderator.

13 As a result, the turbine as part of the BoP is contaminated through the radioactive water.

14 In this construction remains the BoP free of radioactive contamination.

"VVER[15]"s, a reactor type developed for NPPs used in the former Eastern Block countries. Almost 88% of the world's commercial reactors are based on the PWR and the BWR design. Both types were originally designed by GE or Westinghouse and subsequently licensed.

18. The results of the market investigation largely confirmed that there are some arguments that militate for separate product markets for each NSSS type[16]. Indeed, customers often have a preference for a specific reactor type[17]. Also, most of the actors are specialised in a specific design type (e.g. Westinghouse is mainly providing PWR-designs while Toshiba only offers BWR designs) and the involved knowledge appears to be significantly different with regard to the respective reactor type. It appears, however, that the differences between the designs for "special" reactors on the one hand (such as GCRs or PHWRs) and LWR (PWRs and BWRs) on the other hand are more important than the differences between PWR and BWR reactors, since all LWR reactors share an important part of their technology.

19. For the purpose of the present decision, the question, whether a further distinction in the product market definition according to reactor types has to be made, can be left open, since competition would not be significantly impeded under either definition.

Possible markets according to reactor generations

20. It should also be noted that different *generations of reactors* (NSSS) can be distinguished today. The Parties propose the following segmentation for NSSS designs offered today or in future[18], without proposing to define separate markets for each generation:

- Generation III: Developed in the 1990s; evolutionary design offering significant advances in safety and economics, e.g. advanced LWRs, such as the ABWR (developed by GE, Hitachi and Toshiba), and the System 80+ (an advanced PWR developed by Westinghouse).

- Generation III$^+$: "Post-Generation III" designs which are expected to be used for the NSSSs of new NPPs to be deployed by 2015 (e.g. the AP1000 design/Westinghouse, the EPR/Areva, the ESBWR[19]/GE, the VVER AES 92/Atomstroyexport.

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15 VVER stands for *"Voda-Vodyanoi Energetchesky Reaktor"* (similar to a PWR).

16 See question 3 of the questionnaire for customers, sent on 07.08.2006, and question 3 of the questionnaire for competitors, sent on 07.08.2006.

17 By way of example, 86% of all NSSS in Europe are based on the PWR design, while only 60% of all NPPs worldwide use the PWR design.

18 This segmentation disregards "Generation I" (NPP built in the 1950s and 1960) and "Generation II" (NPP built from the 1970s to 1980s), since the Commission understands that these designs are no longer offered on the market.

19 "European Simplified BWR".

- Generation IV: Generation IV-designs are being developed with the support of several countries for commercialisation in the more distant future (*i.e.,* after 2030).

21. According to the Parties, Toshiba currently offers only "Generation III"-designs ("ABWR"), but no Generation III$^+$-design, while Westinghouse offers already today a Generation III$^+$-design (the "AP 1000" design). The Commission has considered whether it might be appropriate to define distinct markets for each generation. Indeed, some customers have pointed at the fact that different technology is involved in the production of NSSSs for each generation[20]. Yet, while there may be important differences from a demand- and supply-side perspective between previous "Generation II"- and current Generation III/III$^+$-designs in terms of technology and safety, the differences between Generation III and Generation III$^+$-designs appear to be less significant. On the contrary, many customers have confirmed that Toshiba's ABWR design is in competition with Westinghouse's AP1000-design.

22. However, for the purpose of the present decision, the question, whether a further distinction in the product market definition according to reactor generations (in particular a distinction between Generation III and Generation III$^+$-designs) has to be made, can be left open, since competition would not be significantly impeded under either definition.

Possible distinct markets for reactor components for new NSSS

23. While new NSSS are usually designed by one single supplier which acts as a "prime-contractor", these prime-contractors may involve other suppliers as sub-contractors for the manufacture of specific components (also referred to as "sub-assemblies"). In other words, NSSS suppliers do not only offer the entire design and manufacture of an integral NSSS, but also, to a greater or lesser extent[21], certain components for new NSSSs (e.g. reactor vessels, reactor vessel internals, control rod & drive mechanisms, safety related pumps and valves etc.).

24. The market investigation has shown that both Parties have only limited activities in the supply of components for new NSSS to third parties and that their activities would only overlap to a very limited extent. The Commission can therefore leave the exact delineation of the components market for new-NSSS components open.

b) Supply of services and equipment to existing NSSS ("nuclear services")

25. The Parties propose to define a separate product market for *service and equipment for existing NSSS* ("nuclear services"). Such a market should, according to the Parties, comprise inspection, maintenance and repair services, engineering services, repair services as well the supply of equipment for existing NPPs (e.g. projects for the replacement/upgrade of NSSS components).

26. Inspection, maintenance and repair services are particularly safety sensitive, since even a minor malfunction of an NSSS can have dramatic consequences in an NSSS. Nuclear

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[20] See question 5 of the questionnaire for customers, sent on 07.08.2006, and question 5 of the questionnaire for competitors, sent on 07.08.2006.

[21] Westinghouse is only active in the components business to a limited extent and does only manufacture a few components for NSSS, see paragraph 213 of the Notification.

services are thus distinct from services for the conventional part of the NPP ("CI" or "BoP"). Indeed, the latter do not require a similar safety-standard and are less critical than nuclear services. Suppliers like Alstom and Siemens are active in the supply of BoP but they have no technical capability or qualifications that allow them to supply nuclear services for the NSSS.

27. The market investigation has also confirmed that the majority of customers support the Parties' view that the market for nuclear services should not only comprise "classic" services such as inspection, maintenance, engineering and repair, but also the supply of *components for existing NSSS*[22]. Typically, operators replace various components of the NSSS when they reach the prospected end of their product life cycle[23] to ensure safety and efficient operations and to comply with the relevant safety regulations.

28. New technological developments and the fact that governments in many countries agreed to extend the license for their NPPs have lead to an increasing importance of the nuclear services market. The Commission understands that nuclear services currently represent a large part of customers' operation costs (and an important source of revenue for suppliers)[24].

29. A further distinction between two separate markets for nuclear services related to BWR-NSSS and nuclear services related to PWR-NSSS has not been supported by the market investigation[25].

c) Supply of Instrumentation and Control systems (I&C systems) for NPPs

30. The Commission has in a previous case dealt with one specific component type of a NPP and defined a separate market for *Instrumentation & Control ("I&C") systems* for NPPs[26]. This component type includes a range of equipment that controls the safe and efficient operation of the nuclear process. Customers may buy complete I&C systems or certain components for I&C systems (e.g. a reactor protections system).

31. The Commission has further distinguished within I&C systems between (a) safety-related I&C-systems[27] (i.e. I&C systems used in the NSSS or "Nuclear Island") and (b) "operational I&C systems" (systems relating the BoP / CI part of the plant and are not necessarily specific to nuclear power plants[28]). Indeed, both systems are significantly

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22 See question 49 of the questionnaire for customers, sent on 07.08.2006, and question 46 of the questionnaire for competitors, sent on 07.08.2006.

23 This is typically less than the entire lifecycle of a NPP.

24 By way of example, about [40-60]% of Westinghouse's revenues are with nuclear services.

25 See e.g. question 50 of the questionnaire for customers, sent on 07.08.2006.

26 See Case COMP M.1940 - *Framatome/Siemens/Cogéma/JV* .

27 Typical applications are reactor protection and the activation of engineered safety features (e.g., emergency core cooling and residual heat removal, as well as conditioning and processing of neutron flux monitoring signals).

28 Operational I&C systems encompass all equipment required for the operation, surveillance, automation, monitoring and archiving of the BoP.

different not only from a customers' point of view but also with regard to the supply-side (different suppliers active, different know-how involved etc.).

32. As concerns *operational I&C systems*, these systems seem to be comparable to systems which can be found in the conventional part of any conventional power generation facility (systems to control the generators that produce electricity, in which a number of competitors are active that are no vendors of NPPs, e.g. Siemens, Alstom, apart from the NPP vendors). The Parties follow the Commission's previous approach to distinguish separate markets for operational and safety-related I&C systems.

33. As concerns *safety-related I&C systems*, both Toshiba and Westinghouse design safety-related I&C for their own NPP designs. However, these designs appear to be manifestly different from each other. As concerns sales of safety-related I&C systems or components to third parties, the Parties submit that only Westinghouse is selling such systems to third parties, while Toshiba is not active in this field.

34. A further distinction of the markets for I&C systems for NPP (e.g. I&C systems for PWR and for BWR reactors) has not been supported by the market investigation[29].

d) Design and manufacture of nuclear fuel assemblies ("FAs")

Fuel assemblies: characteristics

35. The transaction has also an impact on product markets for the supply of so-called "fuel assemblies" ("FAs"). Fuel assemblies are devices used to bring the nuclear fuel into the reactor. They consist of a metallic structure containing fuel rods, which are in turn filled with cylindrical pellets of enriched uranium. FAs are typically kept in operation in the reactor vessel for about twelve to twenty-four months until they need to be replaced by fresh fuel. About 20 to 50% of FAs in the reactor core must be replaced every 12 to 24 months during regular maintenance schedules.

FAs for BWR vs. FAs for PWR

36. In previous decisions, the Commission has, inter alia[30], distinguished *two separate* product markets for *PWR-fuel assemblies* on the one hand and *BWR-fuel assemblies* on the other hand. The Parties agree with the Commission's previous product market definition. The market investigation has largely confirmed that FAs for BWR and for PWR are not in the same product market[31]. In fact, from a customer's perspective, both FA-types are not substitutable, because BWR-assemblies cannot be used in PWR reactors and vice versa[32]. Also from a supply-side perspective, it appears that the know-

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[29] See question 23 of the questionnaire for customers, sent on 07.08.2006, and question 21 of the questionnaire for competitors, sent on 07.08.2006.

[30] The Commission has also distinguished FA's for other reactor types (e.g. Gas-Cooled Reactors) and so called Mixed Oxide Fuel ("MOX"-fuel). However, the Parties are not active in these fields. Therefore, such potential markets can be disregarded for the purpose of this decision.

[31] See question 67 of the questionnaire for customers, sent on 07.08.2006, and question 63 of the questionnaire for competitors, sent on 07.08.2006.

[32] See already case COMP M.1940 - *Framatome/Siemens/Cogéma/JV ,* Official Journal L 289, 06/11/2001, paragraph 21.

how involved in the production of BWR-assemblies differs from the know-how required for the production of PWR-assemblies. This is because the materials used, the configuration, the machinery for the production, the geometry, the operation support and, accordingly, also prices differ considerably for both FA types[33].

2. Relevant geographic markets

a) Supply of NSSS for new NPPs

37. The Notifying Parties submit that the relevant geographic market for the design and manufacture of new NSSS is *EEA-wide* in scope. They mainly argue that different suppliers were focussing on different regions, that customers have a clear preference in the world and that the technological requirements (certifications, regulatory approvals) in the EEA differ significantly from other regions.

38. Admittedly, customers of NSSS for new NPPs are often state-owned energy companies which traditionally have had a preference for suppliers from their own country or region. Similarly, many suppliers limited their activities to their home country or to their home region in the past. It is also true that different regions and different countries apply different regulatory standards for NSSS and that certification or authorisation standards are significantly different in different regions.

39. However, the Commission's market investigation has revealed that the majority of customers and competitors regard the market for the supply of NSSS for new NPPs as worldwide in scope[34]. This is not only because more and more suppliers of NSSSs offer, as set out above, their products in other regions than their home country[35]. Given the long time it takes to plan and construct a NPP/NSSS and given the high value of such a contract, transportation costs are not a considerable barrier to entry. While it is true that authorisation/certification requirements may render entry for new suppliers more difficult and costly, these barriers can be overcome and do not prevent foreign suppliers from offering their designs. In fact, today not only companies such as General Electric, Westinghouse and Areva are offering NSSSs to customers worldwide and have already undergone qualification procedures in many regions of the world; also smaller suppliers have started to offer and to qualify in other regions. Although it may take 1-4 years for a supplier to fulfil all certification requirements in a country or for a customer for which he has not yet obtained a certification, this time is not necessarily a decisive obstacle for new foreign NSSS suppliers, since the planning process and the purchase decision for a new NPP can take between five and twenty years. What is more, the Commission has found evidence that suppliers were even chosen as suppliers

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33 See also case COMP M.1940 - *Framatome/Siemens/Cogéma/JV ,* Official Journal L 289, 06/11/2001, paragraph 23.

34 See question 7 of the questionnaire for customers, sent on 07.08.2006, and question 7 of the questionnaire for competitors, sent on 07.08.2006.

35 See above, paragraph 9.

for NSSS before they had undergone the necessary authorisation/certification procedure[36].

40. On the other hand, the market investigation has, at least to a certain extent, supported the Parties' argument that the competitive pressure on European suppliers from Japanese competitors (such as Toshiba and Mitsubishi Heavy Industries) appears to be much more limited than from competitors from Europe or from the US. While GE has been active on the European market for a long time with significant success, none of the Asian suppliers has sold a single NSSS in Europe until today. Many European customers have also indicated that they had some reservations as to buying NSSS from Japanese suppliers, mainly due to their lacking experience with European projects and standards[37].

41. However, for the purpose of the present decision it can be left open whether Japan has to be excluded from the market for the supply of NSSS into Europe, since no competition concerns would arise regardless whether a worldwide market or a market excluding Japan would be defined.

b) Nuclear services

42. As regards the geographic market, the Parties also propose to define EEA-wide markets, with a view to the necessity for suppliers to be close to the customer and to know their specific needs. The Commission has not dealt with the nuclear services market in previous decisions.

43. On the one hand, it appears that detailed knowledge of the particular NSSS design is required to provide nuclear services, and that operators often award nuclear service contracts to the original supplier of the NPP/NSSS. Some customers have indicated that local presence and the supplier's closeness to the customer is a factor they take into account when it comes to choosing a service provider. Toshiba claims that it has never directly offered nuclear services to NPPs installed in the EEA. Also Westinghouse only offers nuclear services for its own NSSS designs. Toshiba stresses that it has no specialised subsidiaries in the EEA from which it could potentially service NPP operators.

44. On the other hand, the market investigation has shown that there is at least potential competition from all main nuclear services providers worldwide for important service contracts. Customers (and sometimes also prime contractors[38]) organise *world-wide tenders* for larger components that need to be replaced in NSSS. Toshiba itself acknowledges that it participated once in such a tender for a sub-contractor position in a nuclear service project (for a project in Sweden in 2000, however without having success).

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36 See question 12 d) of the questionnaire for customers, sent on 07.08.2006.

37 See questions 10 and 11 of the questionnaire for customers, sent on 07.08.2006.

38 In the case of bigger replacement projects, customers awards sometimes the main contract to a prime-contractor which then awards contracts for components to sub-contractors, similar to the situation for new NSSS.

45. It can ultimately be left open whether the nuclear service markets are worldwide in scope or to be defined more narrowly (e.g. excluding Japan or European-wide), since the transaction does not give raise to any competition concerns in this field und either definition.

c) I&C systems

46. As regards the geographic market for I&C systems, the Parties propose again to define EEA-wide markets. The Commission had left the question of the geographic market open in the "Framatome" case, although it tended to assume an EEA market[39]. While the results of the Commission's market investigation in the present case seem to indicate that the markets for operational and safety-related I&C systems are probably wider than European today, some European customers have, again, expressed some reservations as to buying I&C systems from Japanese suppliers. In any event, the exact delineation of the geographic market can be left open for the purpose of the present decision since competition would not be effectively impeded under either geographic market definition.

d) PWR and BWR fuel assemblies

47. As regards the geographic market definition for the supply of PWR and BWR fuel assemblies, the notifying Parties maintain the view that this market is EEA-wide in scope. This is in line with the Commission's findings in the *Framatome* decision from 2001[40]. The Commission based its assessment inter alia on the fact that FAs are a particularly sensitive product, which leads to relatively high transport costs if FAs have to be transported over long distances (notably if many borders or even oceans have to be crossed). The Commission also found that prices for FAs in the EEA were higher as compared to the US or the Asian region and that different safety requirements would further increase the barriers for any import.

48. The Commission's market investigation in the present case has at least partly confirmed the Commission's previous market delineation. In fact, competitors pointed at the existence of significant barriers to imports into Europe[41]. In addition to the factors cited above, third parties mentioned notably the existence of relatively high customs duties on FAs, the relative impact of which being even higher (up to 18.5%) given that FA fabrication represents only about 20% of the bundle value subject to the tariffs[42]. Many customers also seem to have a preference for suppliers from their own region, which is reflected by the low level of FA imports into the EEA which are estimated to be far below 5%.

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39 See case COMP M.1940 - *Framatome/Siemens/Cogéma/JV ,* Official Journal L 289, 06/11/2001, paragraph 117.

40 See case COMP M.1940 - *Framatome/Siemens/Cogéma/JV ,* Official Journal L 289, 06/11/2001, paragraph 27-32.

41 See e.g. question 64 of the questionnaire for competitors, sent on 07.08.2006.

42 See already COMP M.1940 - *Framatome/Siemens/Cogéma/JV ,* Official Journal L 289, 06/11/2001, paragraph 30.

49. It should, however, be noted that some main suppliers (notably GE via its joint venture GNF, but also Westinghouse) are active on a world-wide basis in supplying FAs and are indeed able to transport FAs over longer distances[43]. Also many customers indicated that they would not exclude sourcing from outside the EEA and would rather define a worldwide market for FAs.

50. For the purpose of the present decision it is not necessary to decide whether the markets are EEA-wide or larger, since the commitment proposed by the Parties will remove the competition concerns both on an EEA- and on a world-wide level.

3. Assessment of the impact of the transaction on competition

51. The present transaction combines two suppliers of nuclear technology whose products and activities are to a large extent complementary. While Toshiba is clearly focussed on products related to BWR technology and has only marginal sales outside Asia, Westinghouse offers mainly products and services for NSSS based on PWR technology outside Asia.

52. However, given the fact that the markets for nuclear technology are already highly concentrated and that any competition problem in this sector might at least potentially affect the safety of the European energy supply, the Commission has carefully analysed not only the present competitive structure of the markets but also assessed whether the transaction might impede *potential competition* in the future.

A. Analysis of non-coordinated effects

a) Supply of NSSS for new NPPs

EEA market

53. The Parties claim that there is no affected market for the supply of new NSSS, since the Parties' activities do not overlap in any region (Toshiba being active only in Asia). This would, indeed, be true if an EEA-market for NSSS was assumed:

[43] Even the Parties mention in the Notification that Westinghouse is supplying European customers with FAs produced in the US, see paragraph 335, footnote 104.

Table 2: Reactors PWR/BWR NSSS in the EEA (installed base)

Reactors in the EEA	PWR (Pressurised Water Reactor)		BWR (Boiling Water Reactor)	
	Number of NSSS	**%**	**Number of NSSS**	**%**
Toshiba	0	0%	0	0%
Westinghouse	14	13.1%	9	52.9%
Toshiba + Westinghouse	**14**	**13.1%**	**9**	**52.9%**
Areva	74	69.2%	6	35.3%
GE	0	0%	2	11.8%
Atomstroyexport/Skoda	18	16.8%	0	0%
Others	1	0.9%	0	0%

54. The analysis of the installed base of NSSS in the EEA shows that Toshiba has not sold any BWR NSSS into this region so far[44]. Looking at the installed base in PWR technology, Westinghouse faces Areva and Atomstroyexport/Skoda as its strongest competitors, whereas in the field of BWR technology the principal competitors are Areva and GE.

55. Although the analysis of previous sales may only partly be indicative for the future market position of the main suppliers, it is to be expected that Areva will still be the clear market leader for PWR NSSS in the future. Even if Toshiba should decide to enter the PWR business, it is highly unlikely that it could gain a market position which might come close to the current incumbent. Also in the field of BWR NSSS (accounting only for 14% of all European NSSS), where Toshiba is already active outside the EEA and may be seen as a *potential* competitor within the EEA, Toshiba has not exercised any conceivable competitive pressure on the three main suppliers Westinghouse, Areva and GE.[…][45] […] High costs and major re-engineering of their NPP design prevent them, in particular in view of the fact that virtually no demand for new NPPs exist in the EEA in the foreseeable future. Moreover, estimates suggest such work to last at least five to seven years. On the contrary, Westinghouse has certified NPP designs according to EUR, as well as the competitors Areva, GE and a Canadian company.

Worldwide market

56. When considering hypothetical *world markets*, the Parties' activities would overlap, though with a relatively low combined market share. The merger would in any event not combine the two strongest or closest competitors. Toshiba's and Westinghouse's businesses would currently only overlap in BWR designs, amounting to a combined market share of 28.3%. GE is by far the strongest competitor with in BWRs representing a 56.6% market share. Other competitors are Areva, with a market share of 6.5% and Hitachi with 8.7%. If not the entire installed base, but only constructions for

44 Toshiba does not offer PWR reactors so far.

45 The EUR (European Ulitities Requirement) standard, defined by the main European suppliers, is the most important standard for NPPs in Europe

within the last twenty or even ten years were to be considered, the combined market share would be significantly lower. No overlap occurs in PWR designs since Toshiba has no activities in PWR.

Table 3: Reactors PWR/BWR world-wide (installed base)

Reactors worldwide	**PWR** (Pressurised Water Reactor)		**BWR** (Boiling Water Reactor)	
	Number	**%**	**Number**	**%**
Toshiba	0	0%	17	18.5%
Westinghouse	88	33.5%	9	9.8%
Toshiba + Westinghouse	**88**	**33.5%**	**26**	**28.3%**
Areva	89	33.8%	6	6.5%
GE	0	0%	52	56.5%
Ministry of Atomic Energy (Russia)	29	11%	0	0%
Atomstroyexport/Skoda	22	8.4%	0	0%
Mitsubishi Heavy Ind.	19	7.2%	0	0%
Hitachi	0	0%	8	8.7%
KHIC (Korea)	7	2.7%	0	0%
Others	9	3.4%	0	0%

57. Toshiba's market share in general terms is small compared to that of Westinghouse. Toshiba only constructed a fraction of all NPPs world-wide in comparison to Westinghouse[46], all located in Asia. Moreover, strong competitors are present at a world-wide level, namely Areva and GE, but to some degree also Hitachi and Mitsubishi Heavy Industries.

58. The market investigation has shown that customers do not expect that the competitive situation will significantly change in the next 10 to 15 years. None of the customers expects that Toshiba or Westinghouse could gain a dominant position in the markets for the supply of BWR or PWR NSSS or for any specific reactor generation. On the contrary, a future outlook on projects which are under construction or being awarded reveals that Westinghouse was not more successful in securing contracts than its competitors. Westinghouse claims that it is currently not active in the construction of a new NPP. Only Toshiba is partly involved (in a construction JV together with Mitsubishi, Hitachi and Fuji) in the construction of one new NPP in Japan. With respect to future projects, i.e. projects that are in discussion but no firm conclusion about its realisation can be expected in the near future, Toshiba expects to be involved in some

46 For Toshiba 17, for Westinghouse 97 reactors.

projects in Japan whereas Westinghouse expects involvement in China, Korea and the U.S[47]. It is, according to customers, not to be expected that Westinghouse will win the majority of these contracts, because other strong competitors are able to offer equivalent products and for many of these projects.

59. It can thus be concluded that the transaction is not likely to significantly impede competition in the Common Market and the EEA in the field of sales of NSSS for new NPPs.

Components

60. With respect to NSSS *components*, the Parties submit that the market for components for new mills does not play an important role in the business of all main suppliers and that there are very few components for new NSSS (if any) which both, Toshiba and Westinghouse could sell to third parties. Indeed, Westinghouse's components are mainly based on PWR-types, whereas Toshiba's are based on BWR-types. Toshiba has not yet sold any components into Europe (but participated in bids).

61. The market investigation has confirmed that Toshiba and Westinghouse have no specific strength for any component used in a NSSS which could enable them to exercise market power. Most customers are not aware of any component sales of Toshiba into Europe. Accordingly, the competitive overlap of the Parties (if any) in the component market(s) resulting from the transaction is not likely to significantly impede competition in the Common Market and the EEA.

b) Nuclear services

62. The Commission's market investigation has also confirmed the Parties' view that the transaction is not likely to give rise to competition problems in the market for nuclear services.

63. The Notifying Parties estimates that their *worldwide* combined market share for nuclear services is about [15-25]%, while Areva would account for [15-25]% and GE for [0-10]% of the market. In Europe, Areva would be the clear market leader with a share of [70-80]%, followed by Westinghouse with a share of only [10-20]%[48]. The market investigation has largely confirmed these estimates both, on a European and a worldwide level; as concerns the worldwide nuclear service market, some competitors even estimated that the Parties' position is weaker and Areva's position is stronger than indicated by the Parties.

64. On a worldwide basis, Toshiba and Westinghouse will therefore still face a number of strong competitors and will not have the possibility to behave independently from there competitors. In Europe, the merging parties would be far behind the dominating market leader, Areva. Even if Toshiba should be perceived as a potential competitor in Europe, the transaction is not likely to give rise to anti-competitive non-coordinated effects in Europe. Competitors do not expect the market shares to change significantly in the

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47 See Noticication, paragraphs 377 and 378.

48 According to the Parties, Toshiba has no sales until today in the field of nuclear services in Europe. This has been confirmed by the market investigation.

future, and also customers do not see any specific strength of the merging parties that could enable them to gain a dominant position in the nuclear service market in the future, neither in Europe, nor on a worldwide market.

65. It can therefore be concluded that the transaction is not likely to significantly impede competition in the Common Market and in the EEA in the field of nuclear services.

c) I&C systems

66. The Notifying Parties have indicated that they were unable to provide EEA- or worldwide market share estimates for the markets for operational and safety-related I&C systems. They claim that Toshiba/Westinghouse's position in the *worldwide* markets for safety-related I&C systems would in any event be insignificant, since their I&C systems are specific to their respective own plant design. As concerns the European markets, Toshiba has not sold any safety-related I&C system into the EEA until today according to the Parties, mainly because I&C system sales in the EEA require local presence and logistics in proximity to the customer and Toshiba's products are different from to the European requirement. While Toshiba reports that it has no intention to enter the market for safety-related I&C in the EEA in the future, it concedes that in 2001, Toshiba participated in a tender (as a sub-contractor) for […].

67. However, the market investigation has confirmed that the market for operational and safety-related I&C systems represents only a relatively small part of the total cost of a new NPP (less than 5%). Even other competitors were therefore not able to estimate their competitors' sales and their own market shares in these markets. In any event, third parties asked in the market investigation do not expect that Toshiba's market position is likely to increase considerably in the next years. As concerns the combined position of the Parties in operational I&C systems on a worldwide basis, the competitors' estimates vary significantly, but none of the competitors claims that the merging parties will hold a dominant position after the merger. All estimates for Toshiba's current market share range from 3-6%; while the market shares for Westinghouse varies from 11-30% (operational I&C systems) and 12-30% (safety-related I&C systems) respectively. Therefore, the position of the merged entity will not be stronger than the position of Areva on these markets. In any case, a number of other strong competitors will be able to supply operational and safety-related I&C systems worldwide and in Europe, such as other NPP-vendors, like GE, or other suppliers, such as ABB, Siemens, Emerson, Invensys, Honeywell and Foxboro.

68. It can therefore be concluded that the transaction is not likely to significantly impede competition in the Common Market and in the EEA in the field of operational and safety-related I&C systems.

d) PWR and BWR fuel assemblies

Westinghouse's and Toshiba's activities in the market for FAs

69. As to the impact of the proposed concentration on the markets for fuel assemblies, it can be observed that only a relatively limited number of players are supplying FAs for BWR and PWR NSSS designs today, namely Areva, Westinghouse, Global Nuclear

Fuel ("GNF", through its subsidiaries GNF-A[49], GNF-J[50] and GENUSA[51]), Mitsubishi Heavy Industries and Nuclear Fuel Industries Ltd. ("NFI").

70. *Westinghouse* is currently selling both types, FAs for BWR and PWR. While Westinghouse produces and markets its PWR und BWR FAs on its own in most regions of the world, it has a supply venture with the Spanish company ENUSA, the European Fuel Group ("EFG"), for the production and distribution of PWR FAs in Europe.

71. *Toshiba* is not directly active in the production of FAs and submits that it has no activity in this market at all. It should, however, be noted that Toshiba holds a minority share in GNF, one the world's leading supplier of BWR FAs, to which it has transferred its FA assets when joining the joint venture. GNF is a joint venture between GE, the Japanese company Hitachi and Toshiba. GE holds the majority of the shares (51%), while Hitachi and Toshiba each hold 24.5% of the voting interest in the joint venture. GNF-A sells only BWR FAs and sells to worldwide customers, except customers in Europe[52] and Japan. Through its stake in GNF, Toshiba holds also an indirect minority share in GENUSA, a joint venture between GNF's subsidiary GNF-A, holding 51% of the shares, and the Spanish company ENUSA, holding 49%. GENUSA sells FAs only for BWR and only on the European market.

Market shares

72. The following tables show the market share estimates of the Notifying Parties for PWR and BWR FA supplies in the EEA[53]:

Table 4: FAs for PWR and BWR in the EEA (2005)

FAs in the EEA	PWR FAs	BWR FAs
GENUSA	[0-10]%	[10-20]%
Areva	[70-80]%	[30-40]%
Westinghouse (Enusa)[54]	**[20-30]%**	**[40-50]%**
Toshiba	**[0-10]%**	**[0-10]%**
GNF	[0-10]%	[0-10]%

49 GNF-A, a 100% subsidiary of GNF, supplies FA to the US and other world regions, except Japan and Europe.

50 GNF-J supplies FAs exclusively for the Japanese market.

51 GENUSA supplies FAs for Europe.

52 The GENUSA Formation Agreement provides […]

53 It should be noted that the Parties have included Switzerland into the market.

54 Westinghouse's sales include sales of ENUSA since Westinghouse produces PWR FAs in a joint venture with ENUSA.

73. The Commission's market investigation has largely confirmed the Parties estimates. The table shows that there are currently only two suppliers for PWR FAs in the EEA (Areva and Westinghouse) and three for the supply of BWR fuel (Areva, Westinghouse and GENUSA). Toshiba has no own production or sales of FAs into Europe.

74. On a worldwide basis, Toshiba has also no direct activities in the FAs business. For PWR FAs, there are currently four main competitors, with Areva and Westinghouse being the clear market leaders. As concerns BWR FAs, there are also four main suppliers active worldwide, but with GNF as a market leader, holding more than [55-75]% of the market, which is well above Areva's share of [10-25]%.

Table 5: FAs PWR/BWR worldwide (2005)

FAs worldwide	PWR FAs	BWR FAs
GNF (GE)	[0-10]%	[60-70]%
Areva	[30-40]%	[10-20]%
Westinghouse	**[30-40]%**	**[5-10]%**
NFI[55]	[0-10]%	[0-10]%
Mitsubishi Heavy Ind.	[0-10]%	[0-10]%
Toshiba	**[0-10]%**	**[0-10]%**

75. Although Toshiba is not itself active in the FA market but only through GNF, the Commission has verified whether and to what extent Toshiba's *indirect* involvement as a minority shareholder in GNF, GNF-A, GNF-J and GENUSA might allow Toshiba to influence the competitive situation in the FA markets, be it by exercising control over GNF (1), be it by using its (non-controlling) rights as a minority shareholder (2).

(1) No control of Toshiba over GNF/GENUSA

76. As shown in the table above, the transaction would lead to a significant combined market share both on an EEA and on a world-wide level, if GNF's and GENUSA's market shares should have to be allocated to Toshiba should Toshiba be considered to have (joint) control over GNF and/or GENUSA[56]. However, the Commission's investigation has shown that Toshiba does not have control pursuant to Article 3(2) of the Merger Regulation over GNF or GENUSA. According to the agreements governing the GNF joint venture and its subsidiaries GNF-A, GNF-J and GENUSA, Toshiba is not able to exercise decisive influence on the composition, voting or decisions of the organs of any of these companies. […][57].

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55 Nuclear Fuel Industries Ltd., a Japanese supplier of FAs, mainly active in Japan.

56 It should, however, be noted, that in Europe the overlap would exclusively concern FAs for BWR-reactors which account only for 14% of Europe's NPPs (86% being PWR reactors).

57 See paragraph 19 of the Commission Notice on the concept of concentration under Regulation (EEC) No 4064/89 on the control of concentrations between undertakings, OJ C 66, 2.3.1998, p.2.

77. While Toshiba has the right to nominate certain Board Members […] almost all major business decisions relating to the ongoing business or to the company's strategy, including the adoption of the annual "Strategic Plan", can be taken against the vote of Toshiba's representative in the GNF board[58].

78. […][59].

79. The remaining veto rights Toshiba holds pursuant to section […] of the GNF Formation Agreement […] might allow Toshiba to block some specific decisions (such as the expansion into new business areas). However, these rights cannot be regarded as conferring control to Toshiba, since they correspond to veto rights normally accorded to minority shareholders in order to protect their financial interests as investors in the joint venture[60].

80. It can thus be concluded that Toshiba does not control GNF or any of GNF'S subsidiaries or joint ventures and, accordingly, that Toshiba/Westinghouse on the one hand and GNF/GENUSA on the other hand have to be regarded as separate companies for the purpose of the competitive analysis of the present case.

(2) Possible competition problems through Toshiba's ability to block a potential expansion of GNF's business

81. As showed above, the markets for PWR and BWR fuel assemblies are highly concentrated today. This is particularly true for the markets for FAs for PWR reactors, which account for 86% of all reactors in Europe and in which only two players are active in Europe (Westinghouse and Areva) and only four world-wide. Not only with a view to the mere size of the PWR market (worldwide PWR supplies in 2005: [3500 - 4500] MTHM[61], as opposed to [1500 - 2500] MTHM for BWR), PWR reactors are expected to be the preferred reactor type for future NPP projects. Customers and competitors have confirmed that the PWR FA market will be expanding over the next years.

82. The Commission has therefore to safeguard that the merger will not negatively affect the future market structure, in particular with a view to the PWR FA markets, where only a few players are active and investment barriers are significant in terms of know-how and cost. As the proper functioning of the markets for nuclear products is crucial for a safe and reasonably cheap energy supply to European customers, whose energy supply to a large extent depends on PWR reactors, the Commission has to look carefully not only at the present competitive situation, but also at possible future developments in the markets, i.e. on effects of the merger on potential competition which might be removed or restricted by the merger between Toshiba and Westinghouse.

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60 See paragraph 22 of the Commission Notice on the concept of concentration under Regulation (EEC) No 4064/89 on the control of concentrations between undertakings, OJ C 66, 2.3.1998, p.2.

61 MTHM = Metric Tons of Heavy Metal.

83. Indeed, it has to be noted that Toshiba, although not active in the production and supply of FAs today, will become a *direct competitor to GE* through the acquisition of Westinghouse which is already active in the FA business, selling BWR FA as GE/GNF.

84. The merger might therefore create an incentive for Toshiba to prevent its new competitor from further expanding its business. This does not only apply to a possible expansion of its business in the field of BWR FAs, where GE is already active. Also, the Commission has reason to believe that it could be in Toshiba's interest to prevent GE from expanding its business into the supply of FA types in which it is not yet active, such as VVEL FAs or, in particular, PWR FAs, where on a world-wide basis, Toshiba/Westinghouse will be the market leader post-merger (together with Areva).

85. In a concentrated market with only two players in Europe and four worldwide, it would be highly detrimental for customers and consumers should the merger allow Toshiba to prevent GE from offering an alternative for customers to the few existing suppliers.

86. The Commission's initial investigation has shown that Toshiba would indeed be in a position to block a decision of GE/GNF to enter the PWR FA business and that there is a sufficient likelihood of such an expansion.

Toshiba is in a position to prevent GE from entering the PWR FA market

87. As mentioned above, Toshiba currently has, according to the GNF Formation agreement, a number of veto rights that Toshiba could use to prevent GNF from expansions into fields in which they would compete with Toshiba/Westinghouse (such as PWR FAs).

88. […]

89. […]

90. These veto rights could therefore allow Toshiba to effectively prevent GE from expansion of its nuclear fuel business not only outside Europe, but also from starting to sell PWA FAs in *Europe*. Although Toshiba's involvement in the current "European pillar" of GNF, GENUSA, is minimal and despite the fact that Toshiba has no Board Members and no direct veto rights in GENUSA, Toshiba could nevertheless use its veto rights in GNF to prevent GNF and GENUSA from selling PWR FAs in Europe. By way of example, if GE was to decide that it would like to change the GENUSA Formation Agreement in order to expand the cooperation (currently restricted to BWR FAs) to PWR fuel […]. Even if GNF was to decide to start producing a new fuel type without GENUSA, be it on its own, be it though a joint venture or an acquisition, in order to sell this fuel world-wide (i.e. also to Europe) […]. Therefore, Toshiba's existing veto rights in GNF could be used to prevent GE from such a step, cutting-off European customers from a third alternative for PWR FA supplies.

91. It should also be noted that there is no possibility for GE to start any PWR FA activities *outside* the GNF joint venture […].

92. Toshiba could not only hamper or prevent its competitor GE from expanding its business by way of its existing veto rights. After the merger, Toshiba will, through its information rights and its representation in various Boards of GNF and its subsidiaries/joint ventures, also have the opportunity to obtain sensitive *confidential information* which might help Toshiba to make GE's expansion more difficult. In fact,

Toshiba has the right to obtain information on GE's future strategy in GNF, including information on […].

93. In a situation, in which Toshiba and GE will be actually or potentially competing on the same market, such information could not only be used be used by Toshiba to obtain an advantage for its own business with Westinghouse; it would also be an additional means for Toshiba to render GE's expansion into new business areas more difficult. In fact, it is important for a successful business entry strategy to identify business opportunities of which competitors might not be aware, and to openly discuss about R&D advantages or other "unique selling propositions". If Toshiba as one of GE's main competitors has access to almost all this information, it cannot be excluded that Toshiba might use it to make any effort of GE to expand its business into PWR FAs more difficult, thereby ultimately harming consumers in Europe and world-wide who lose an alternative supplier of nuclear fuel.

Expansion into new fuel types is an obvious an realistic perspective for GNF

94. It has to be stressed that Toshiba's ability to hinder its new competitor GE from expansion into the PWR FA market is not just a remote and merely "theoretical" option.

95. As explained above, the market investigation has shown that the PWR FA market is by far larger that the BWR FA market and that the PWR business is even expected to significantly expand in the next five to ten years, not the least because the majority of new reactors to be built in the future is believed to use the PWR design. In such a scenario, it can be assumed that GNF, being not only the world's leading BWR FA supplier but also a leading integrated nuclear products supplier, has a *strong incentive* to expand its business to the production and supply of PWR FAs on a world-wide basis, i.e. including the European market (which is larger in terms of volume than the US PWR FA market).

96. The Commission also believes that GE has the *ability* to enter and to become a credible player in the world-wide and European PWR FA markets within the next five to ten years. Not only is GE one of the few fully integrated suppliers of nuclear products, active in all main areas of the nuclear business (NSSS, I&C, nuclear services, FAs); GE would certainly be one of the most credible supply alternatives for PWR FA customers, since the market test has shown that GE enjoys a good reputation as a supplier of nuclear products and since GE is already today the world-wide market leader for BWR fuel. Also, GE will not be hindered by practical obstacles to enter the PWR FA market. It has undoubtedly the necessary financial means, and there are no insurmountable hurdles to get access to the missing technology which can either be licensed or bought by way of a partnership or an acquisition of a player which is already active in the market.

97. As regards the *timeframe* of a potential entry into PWR, such an entry business would, admittedly, not be feasible within one or two years. A new entrant to the PWR FA market would, according to the market investigation, need between 3-5 years to undergo the necessary testing procedures and to obtain the required authorisations by the relevant national bodies before he could ultimately offer its products to customers. However, it has already been pointed out that the long planning and decision-making cycles in the nuclear business as well as the sensitivity of the product at stake require the Commission not only to look at potential developments within the limited

timeframe of the next one or two years, but to take into account possible changes in the market which could have an effect at a later stage. Even if customers in Europe would be effectively harmed by Toshiba's ability to block GE's expansion only in three to five years from now, such an elimination of potential competition would still be seriously harmful for customers and can therefore be regarded as sufficiently *timely* to constitute a significant impediment of competition.

e) Conclusion

98. The Commission has thus serious doubts that the concentration as originally proposed might significantly impede competition in the PWR FA market, irrespective of whether such a market would be defined EEA-wide or world-wide. Indeed, as set out above, Toshiba's veto and information rights might enable Toshiba not only to prevent GE from entering markets outside Europe (e.g. the US or Asian markets), but also from entering a hypothetical European PWR FA market.

B. Coordinated effects

99. The Commission has also assessed whether the proposed transaction might give rise to anticompetitive coordinated effects. The market investigation has, however, shown that such effects are not likely to result from the transaction. Although almost all affected markets are highly concentrated, with only few players being able to offer NSSS, I&C systems, nuclear services or FAs, customers have not raised concerns with regard to a potential coordination of their suppliers' behaviour.

100. Indeed, customers have pointed at the fact that almost all products sold to nuclear customers are purchased via tenders, in which several suppliers are invited to offer a solution and to submit a bid. Conditions for every project are complex and, and the final terms of the agreements are usually not accessible to the competitors. Apart from the low level of transparency in the market for nuclear products, it appears that these products are by far no homogeneous goods. Every contract for a new NSSS, for I&C systems or nuclear services concerns a highly customised product or service, and the skills required and the value of each individual project can largely differ. This degree of customisation and variation in each single project makes it difficult to compare different projects and, ultimately, to find a mechanism to share the market or to monitor any tacit collusion.

101. Furthermore, the results of the market test indicate that competition conditions in which the large regional suppliers of NSSS, I&C systems or nuclear services operate are in most cases manifestly different. The existing regional differences in the market conditions make any world-wide coordination of the suppliers, all of which based in specific regions, even more difficult.

102. The Commission has also no evidence that the merger would increase the risk that the main suppliers might enter tacitly into a market sharing mechanism by refraining from selling outside their traditional "home base". On the contrary, the market test has shown that many leading suppliers have become increasingly active outside their respective home region in the last ten years, and many customers even expect that the merger will further accelerate this process, since for the first time it brings together two main players active in different regions in the world, facilitating Toshiba/Westinghouse's chances to gain business outside their traditional region.

103. Moreover, it appears that the transaction does not increase the risk of coordination by reducing the number of players in the FA markets compared to the situation today. As concerns PWR FAs, neither Toshiba nor GE were competing with Westinghouse before the merger, therefore the number of players remains unchanged. It does not have to be decided whether Toshiba's ability to block potential entry plans from GE into PWR FAs might increase the risk of coordination in this market by reducing the number of potential players in this market. This is because the commitments proposed by the Parties (see below, VI.) will in any event eliminate all rights that might enable Toshiba to prevent GE from expansion into other business areas.

104. Likewise, the proposed remedies will remove any hypothetical doubts as to an increased risk of coordination in the markets for BWR FAs. Although GE and Westinghouse are competitors today in this market, the proposed commitment will ensure that Toshiba/Westinghouse will not be able to get access to information of GE through the framework of GNF.

105. Finally, the merger might even increase the incentives for the GNF joint venture partners to compete with each other after Toshiba has purchased Westinghouse, since Toshiba will be in competition with Hitachi and GE for a broader range of products than before the merger.

106. It can therefore be concluded that the merger is not likely to increase the risk of coordinated effects in any of the affected markets.

VI. COMMITMENTS OFFERED BY THE PARTIES

107. In order to remove the Commission's serious doubts in the field of the PWR FA markets, Toshiba has used its right to propose remedies pursuant to Article 6(2) of the Merger Regulation in order to obtain clearance of the operation in Phase 1. The submission of these commitments on 26 August 2006 extended the legal deadline for the Commission's decision to 19 September 2006. On 14 September 2006 Toshiba submitted a modified version of its initial commitments.

1. Description of the remedies

108. The content of the final set of Commitments submitted by Toshiba can be summarised as follows:

a) [Commitment relating to Toshiba's board representation in GNF]

109. […]

b) [Commitment relating to Toshiba's veto rights in GNF under the GNF Formation Agreement]

110. […]

111. […]

i) […]

ii) […]

c) [Commitment relating to Toshiba's access to Non-Public GNF Information]

112. […]

a) […]

b) […]

2) Assessment of the remedies

a) Relinquishment of veto rights

113. The Commission's main concerns with regard to the transaction are linked to Toshiba's existing veto rights in GNF, which might constitute an effective legal tool to prevent GE from an expansion of its fuel business, to the detriment of the customers.

114. […]

115. […]

b) Information access

116. The present commitment also addresses the factual risk that might arise from the fact that Toshiba could obtain confidential information on potential expansion and strategy plans of GE and use this information to hamper GE's expansion. […] It cannot be expected that Toshiba will receive any information through these limitations that might be directly related to expansion plans of GE and that might enable Toshiba to make GE's expansion more difficult.

c) […]

117. […]

118. Altogether, the remedies provide an effective and sufficiently clear-cut solution to remove all identified competition problems on all potentially affected markets.

119. The Commission is therefore of the opinion that the Commitments as submitted by the Parties on 14. September 2006 remove the Commission's serious doubts as to the compatibility of the transaction with the Common Market and the EEA Agreement.

VII. CONCLUSION

120. For the above reasons, the Commission has decided not to oppose the notified operation and to declare it compatible with the Common Market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) and 6(2) of Council Regulation (EC) No 139/2004.

For the Commission
signed
Neelie KROES)
Member of the Commission

By hand and by fax:

European Commission

DG Competition

Rue Joseph II 70 Jozef-II straat

B-1000 BRUSSELS

Attn.: Maria Rehbinder

September 14, 2006

Case COMP/M.4153– TOSHIBA / WESTINGHOUSE

Commitments to the European Commission Pursuant to Article 6(2) of Council Regulation (EC) No 139/2004

Pursuant to Article 6(2) of Council Regulation (EC) No. 139/2004 (the "**Merger Regulation**"), Toshiba Corporation ("**Toshiba**") hereby provides the following remedial commitments (the "**Commitments**") to the European Commission (the "**Commission**") in order to enable the European Commission to declare the acquisition by Toshiba of Westinghouse UK Limited ("**WE(UK)**") and BNFL USA Group, Inc. ("**BNFL USA**") (together "**Westinghouse**") compatible with the common market and the EEA Agreement by its decision pursuant to Article 6(1)(b) of the Merger Regulation (the "**Commission Decision**").

The Commitments shall take effect upon Closing for as long as Toshiba retains its interest in GNF. These Commitments shall be null and void if the Purchase and Sale Agreement by and among Toshiba Corporation, British Nuclear Fuels Plc and BNFL (Investments US) Ltd. dated February 6, 2006 and the related agreements providing for the proposed concentration are terminated prior to Closing and/or if the Commission Decision is not issued.

This text shall be interpreted in the light of the Commission Decision to the extent that the Commitments are attached as conditions and obligations, in the general framework of Community law, in particular in the light of the Merger Regulation, and by reference to the

Commission Notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004.

Definitions

The words and phrases set out below have the following meanings in this document:

Toshiba: Toshiba Corporation, a Japanese stock corporation with its principal place of business in Tokyo, Japan, its successors and assigns, and its subsidiaries, divisions, groups, affiliates, partnerships, and joint ventures, and their directors, officers, managers, agents, and employees.

Westinghouse: Westinghouse Electric UK Limited ("**WE(UK)**"), an English Company, and BNFL USA Group, Inc. ("**BNFL USA**"), a Delaware Corporation, their successors and assigns, and their subsidiaries, divisions, groups, affiliates, partnerships, and joint ventures, and their directors, officers, managers, agents, and employees.

Closing: the completion of the purchase and sale of all the issued and outstanding shares of Westinghouse pursuant to the Purchase and Sale Agreement by and among Toshiba Corporation, British Nuclear Fuels Plc and BNFL (Investments US) Ltd. dated February 6, 2006.

Commission Decision: the European Commission's Decision in Case No COMP/M.4153 – Toshiba/Westinghouse, declaring the concentration between Toshiba and Westinghouse compatible with the common market pursuant to Article 6(2) of the Merger Regulation.

Effective Date: the date of the adoption of the Commission Decision.

GNF: Global Nuclear Fuel, a joint venture formed in 1999 by General Electric Company ("**GE**"), Hitachi, Ltd ("**Hitachi**"), and Toshiba, through the combination of their respective nuclear fuel assets. GNF is comprised of four principal entities: (i) Global Nuclear Fuel Holding Co., LLC ("**GNF-Holdco**"); (ii) Global Nuclear Fuel, LLC ("**Manager**"); (iii) Global Nuclear Fuel - Americas, LLC ("**GNF-A**"); and (iv) Japan Nuclear Fuel Co. Ltd. ("**GNF-J**").

GNF-A: GNF-A provides nuclear fuel products and services worldwide, except in Japan. In Europe, GNF-A is active through its joint venture, GENUSA, with the Spanish utility, ENUSA.

GNF-A Governing Board: the governing board of GNF-A that manages GNF-A and consists of seven members: (i) the Manager Chief Executive Officer ("**CEO**") (a GE designee); (ii) the Chief Operating Officer ("**COO**") of GNF-A (nominated by GE and approved by Toshiba and Hitachi); (iii) three members nominated by GE; (iv) one member nominated by Toshiba; and (v) one member nominated by Hitachi.

GNF Entities: the GNF Entities include (i) Global Nuclear Fuel Holding Co., LLC ("**GNF-Holdco**"), a Delaware limited liability company; (ii) Global Nuclear Fuel – Americas, LLC ("**GNF-A**"), a Delaware limited liability company; (iii) Japan Nuclear Fuel Co., Ltd. ("**GNF-J"**), a Japanese company; (iv) Global Nuclear Fuel – International, LLC, a Delaware limited liability company (currently inactive), (v) Global Nuclear Fuel, LLC, a Delaware limited liability company ("**Manager**").

GNF-Holdco: GNF-Holdco is the holding company for GNF-A, GNF-J and any other regional operating companies that may be established. GE has a majority 60% economic interest in GNF-Holdco, while Toshiba and Hitachi each have 22% and 18% respectively. GNF-Holdco is a holding company and does not conduct any business in nuclear fuels. GNF-Holdco is governed by the **Manager.**

GNF-J: GNF-J provides nuclear fuel products and services in Japan.

GNF Formation Agreement: the agreement, dated July 8, 1999, by and among GE, Toshiba and Hitachi to form **GNF**.

Manager: the entity which has responsibility to ensure that GNF-A and GNF-J conduct their business in accordance with the strategic and operating plans.

Manager Board: the governing board of Manager, which consists of four persons: one voting representative designated by each of GE, Toshiba and Hitachi, and the Manager CEO. The Manager CEO (a GE designee) does not have the right to vote on any matters presented to the Manager Board. Only GE, Toshiba and Hitachi have the right to vote through their representatives, based on their respective **Manager Ownership Interest**. All actions of the Manager Board require only a simple majority, which GE alone constitutes. The only exception is with respect to matters that fall under Section 4.4.3 of the Formation Agreement.

Manager Ownership Interest: the ownership interest in Manager, of which GE has 51%, and each of Hitachi and Toshiba has 24.5%.

Non-Public GNF Information: any information used in or related to the nuclear fuel business of GNF, including but not limited to, recent, current or future price or customer data; marketing strategies; current and future nuclear fuel contracts; status of negotiations with present or potential customers; information about present customers, including costs, prices, profitability; cost of specific processes or products; information about recent, current or future capacity and/or utilization or other confidential business data. For the sake of clarity, any GNF information coming into the public domain shall not be considered to be "Non-Public GNF Information," irrespective of its content.

Non-Public Westinghouse Information: any information used in or related to the nuclear fuel business of Westinghouse, including but not limited to, recent, current or future price or customer data; marketing strategies; current and future nuclear fuel contracts; status of negotiations with present or potential customers; information about present customers,

including costs, prices, profitability; cost of specific processes or products; information about recent, current or future capacity and/or utilization or other confidential business data. For the sake of clarity, any Westinghouse information coming into the public domain shall not be considered to be "Non-Public Westinghouse Information," irrespective of its content.

Toshiba veto rights in GNF: Toshiba's rights pursuant to [...]of the Formation Agreement.

Westinghouse Nuclear Fuel Business: the nuclear fuel business of Westinghouse.

Section A. Commitment relating to Toshiba's board representation in GNF

1. […]

2. The proposed Commitment shall take effect at Closing, and will be effective for as long as Toshiba retains its minority interest in GNF.

Section B. Commitment relating to Toshiba's veto rights in GNF under the GNF Formation Agreement

1. […]

2. […]

3. Any dispute, controversy or claim arising out of or in connection with any prior approval right that GE and Hitachi may agree to grant to Toshiba pursuant to the preceding paragraph 3 shall be referred to and finally be resolved by arbitration in accordance with the terms [...] of the GNF Formation Agreement.

4. The proposed Commitment shall take effect at Closing, and will be effective for as long as Toshiba retains its minority interest in GNF.

Section C. Commitment relating to Toshiba's access to Non-Public GNF Information

1. […]

2. […]

a. […]

b. […]

3. The proposed Commitment shall take effect at Closing, and will be effective for as long as Toshiba retains its minority interest in GNF.

Section D. Reporting and Monitoring

1. Toshiba shall submit a written compliance report in English on the implementation of Annexes A, B, and C to the Commission within a period of **[...]** from Completion.

2. Toshiba shall provide and shall cause their advisors to provide the Commission with all such cooperation, assistance and information, as the Commission may reasonably require to perform its tasks within the framework of the present procedure.

Section E. The Review Clause

The Commission may, where appropriate, in response to a request from Toshiba, modify or substitute one or more of the undertakings in these Commitments provided that the Commission has previously found that the structure of the market has changed to such an extent that the undertaking(s) is/are no longer necessary to render the proposed concentration compatible with the common market.

…….

Norio Sasaki
Executive Officer, Corporate Vice President, President and CEO
Power Systems Company, Toshiba Corporation

duly authorized for and on behalf of Toshiba Corporation