

Agreement between the Federal Government and Utility Companies

June-14-2000

I. Introduction

The debate over whether using nuclear energy in our country is responsible has for decades led to weighty discussions and disputes. Regardless of the differences in views on nuclear energy among utilities, the utilities will respect the decision of the federal government to put an orderly end to nuclear power generation.

Given this background, the federal government and the utilities agree to set limits upon the future use of existing nuclear reactors. At the same time, the reactors will be assured uninterrupted operation and waste management, provided they meet high standards of safety and comply with nuclear law.

Both sides will contribute their parts to fulfill the substance of this agreement in the long term. On the basis of its chief principles, the federal government will prepare a draft amendment of the federal nuclear law. The federal government and utilities assume that this agreement and its fulfillment will not lead to damage claims on the part of the participants. The federal government and the utilities understand this agreement as an important contribution toward a comprehensive energy consensus. The participants will together in the future work toward the development of an environmentally sound and, in the European market, competitive energy supply. Thereby an essential contribution will also be made to assure that as many jobs as possible are secured in the energy sector.

II. Limiting Operation of Existing Reactors

1.) Each reactor will be assigned a maximum amount of power it may generate beginning from 1/1/2000 until it is decommissioned. The authorization for operation of a reactor ends when the foreseen amount of generation, or the greater amount transferred to it, is used up.

2.) The remaining generation (net) will be calculated as follows:

For each reactor the basis will be an ordained lifetime of 32 calendar years from the beginning of commercial operation, upon which the remaining lifetime is calculated as of 1/1/2000. For Obrigheim a grace period until 12/31/2002 is agreed upon.

In addition to this reference generation, 5.5% higher annual production will be allowed, assuming continuing technical optimization and rating increases of individual reactors and because of the liberalization and changes in required reserve capacities for grid stabilization. The remaining generation is calculated by multiplying the remaining lifetime by the 5.5%-higher reference generation.

The remaining generation for the individual reactors is listed in Annex 1. These amounts will be made legally binding in an appendix to a revision of the Federal Nuclear Law.

3.) The utilities agree to report monthly the generated power to the Federal Radiation Protection Agency (BFS).

4.) The utilities may transfer generation amounts (production rights) from one reactor to another by the concerned utilities reporting to BFS.

There is unanimity between participants that the flexibility will be used to transfer generation amounts from less-competitive to more-competitive reactors. For that reason generation amounts will in principle be transferred from older to newer and from smaller to bigger reactors. If generation amounts are to be transferred from newer to older plants, this requires the agreement between negotiating parties through the monitoring group (see VII) with the participation of the utility concerned; this is not required when the newer reactor is decommissioned at the same time.

5.) RWE withdraws the licensing application for the Muelheim-Kaerlich reactor. At the same time, the company withdraws its damage suit against the state of Rheinland-Pfalz. Under the agreement all legal and physical claims in connection with the licensing as well as the time offline of the reactor are extinguished.

RWE is granted the possibility of transferring 107.25 TWH to other reactors, according to II/4. It is agreed that this generation amount may be transferred to the Emsland reactor or to other newer reactors as well as to Gundremmingen-B and -C, and a maximum 20% to Biblis-B.

III. Operation of Reactors During Remaining Lifetimes

1.) Safety Standards/Government Regulation

Regardless of differences of views regarding the responsibility for the risks of using nuclear energy, both sides agree that the reactors and other nuclear installations are to be operated so as to meet an internationally acceptable and high level of safety. They reiterate their position that this level of safety will continue to be upheld.

During remaining lifetimes the required safety will be assured by law; the federal government will take no initiative to alter this safety standard and its underlying safety philosophy. By maintaining the requirements under nuclear law, the federal government provides for the undisturbed operation of the installations.

Regarding further procedures for the backfitting of Biblis-A, see the declaration to RWE AG made by the Federal Ministry of Environment & Nuclear Safety (BMU) found in Annex 2. The utilities will carry out periodic safety examinations (SSA and PSA) according to the schedule in Annex 3, and report the results to regulators. By doing this, the practices (already) followed by a majority of reactors will be continued.

The examinations will be repeated every 10 years. The reviews are not required when the owner makes a binding declaration that operation of the reactor will be terminated inside three years after the date set for review in Annex 3.

The safety review will be carried out according to the basis of the guidelines for periodic safety reviews.

If the guidelines are further developed, BMU will involve the states, the Reactor Safety Commission, and the utilities.

The requirement of a safety examination will be assigned as a utility responsibility, to assist government regulators according to Title 19 of the federal nuclear law.

The independence and qualification of GRS (to perform PSRs) remains assured.

The right to perform research in the area of nuclear technology, especially for safety, remains unfettered.

2.) Economic Framework Conditions

The federal government will take no initiative which will discriminate against nuclear energy by one-sided measures. This is also the case for tax law. However the required coverage (Ed.

note: insurance for third-party nuclear liability) will be increased to an amount of DM 5-billion.

IV. Waste Management

1.) Interim Storage

The utilities are building intermediate storage facilities (Ed note: for spent fuel) as quickly as possible at or near the reactor sites. Possibilities are being investigated together to arrange temporary storage capacity at the sites before the intermediate storage facilities are operated.

2.) Reprocessing

Spent fuel management from reactors will be limited to direct (Ed note: geological) disposal beginning 7/1/2005. Until then transports to reprocessing plants are allowed. The delivered amount of spent fuel may be reprocessed. The reprocessing is predicated upon the demonstration that the products of reprocessing which must be taken back are disposed of without harm (Ed note: to the environment or human health, *schadlose Verwertung*).

The utilities will utilize all acceptable contractual possibilities with their international partners to end reprocessing as soon as possible.

The federal government and utilities assume that in the foreseen period of time for reprocessing the remaining amounts can be transported. They also assume that the licensing process for transports to reprocessing can be completed by the summer 2000 provided legal requirements are complied with.

Should the process of completing the reprocessing not be completed in due time, for reasons which utilities are not responsible, both sides will at an appropriate time seek a fitting solution.

3.) Transports

The utilities may transport spent fuel to the regional interim storage facilities (Ed. note: at Gorleben and Ahaus) until the storage facilities at reactors are operable, and may transport spent fuel abroad until reprocessing is terminated. Both sides assume that the local storage facilities will be operable in no more than five years.

The federal government, states, and utilities will establish together a standing coordinating group for carrying out the transports. Its responsibilities include cooperation with federal and state security authorities.

4.) Gorleben

The exploration of the salt dome at Gorleben will be interrupted for at least three, and at most 10 years, to clarify conceptual and safety-technical questions.

The federal government provides a declaration on the exploration of the Gorleben salt dome, which is Annex 4 and is part of this agreement.

5.) Pilot Conditioning Plant

The responsible authorities will conclude licensing of the pilot conditioning plant for spent fuel (Ed. note: under construction at Gorleben) according to legal regulations. Use of the plant will be limited to repairing damaged casks. An application to legally activate its nuclear license (*Sofortvollzug*) will be filed only in the case of acute need.

6.) Konrad

The responsible authorities will conclude the licensing approval process for the Konrad mine shaft (Ed. note: for disposal of low-level and medium-level waste). The party filing the license application will withdraw the application for activation of the nuclear license (*Sofortvollzug*), in order to make possible a legal review.

7.) Costs for Gorleben and Konrad

It is agreed that the accumulated costs thus far for Gorleben and Konrad represent necessary expenditure. The utilities will therefore not demand reimbursement for sums paid in advance. The basis for this is the approval by the federal government to maintain the Gorleben site during the moratorium (cf. in Annex 3 the declaration of the federal government on exploration of the Gorleben salt dome). The maintenance costs will be paid for (for Konrad in part) by the utilities.

The utilities take note that the federal government is trying to resolve the damage claim (Ed. note: of the previous pro-nuclear) federal government against the state of Lower Saxony, made in connection with previous regulatory decisionmaking, including the failure of (Lower Saxony) to award licenses. The utilities declare that they will make no reimbursement demands against the federal government regarding the portion of the costs which applies to them.

8.) Waste Management Forward Planning Requirement

The requirement for demonstration of forward planning of waste management will be adjusted to match the terms of this agreement.

V. Revision of Federal Nuclear Law

1.) The utilities take note that the federal government intends to legally ban construction of new reactors as well as to require construction and operation of interim storage facilities at or near reactors.

2.) On the basis of these main points, the federal government will draft a revision of the federal nuclear law (see the summary in Annex 5). The parties conclude this agreement on the basis that the law will be amended to incorporate this agreement.

Before the cabinet concerns itself with the legal revision, negotiating parties will confer over the government's draft text

VI. Job Security

For the federal government and the utilities the security of jobs in the energy sector has a high priority. The medium-term implementation and especially the possibility of flexible application of lifetimes should be carried out with this goal in mind. The federal government and the utilities will confer on how the framework conditions for an environmentally sound and, in the European market, competitive energy supply can be shaped, to strengthen Germany's role as an energy supplier. The parties want to reach the result that through investment in power plants as well as energy services as many sustainable jobs as possible in our country are secured.

VII. Monitoring

In order to accompany the implementation of this agreement, a high-level working group will be created, which will be staffed by three representatives of the utility parties and three representatives from the federal government. The working group will meet according to

schedule once per year under its chairman from the Federal Chancellery, if necessary appointing additional experts, to together evaluate the implementation of the agreed principles of this accord.

The agreement is initiated by:

For the utilities:

Walter Hohlefelder	VEBA AG
Gerald Hennenhoefer	VIAG AG
Gerd Jaeger	RWE AG
Klaus Kasper	Energie Baden-Wuerttemberg AG

For the federal government:

State Secretary Frank-Walter Steinmeier	Chief, Federal Chancellery
State Secretary Rainer Baake	Federal Ministry of Environment
State Secretary Alfred Tacke	Federal Ministry for Economics

ANNEX 1

Net remaining generation for the individual reactors, as of 01/01/2000 (net TWH)

Obrigheim	8.70
Stade	23.18
Biblis A	62.00
Neckarwestheim- 1	57.35
Biblis B	81.46
Brunsbuettel	46.67
Isar-1	78.35
Unterweser	117.98
Philippsburg- 1	87.14
Grafenrheinfeld	150.03
Kruemmel	158.22
Gundremmingen-B	160.92
Philippsburg-2	198.61
Grohnde	200.90
Gundremmingen-C	168.35
Brokdorf	217.88
Isar-2	231.21
Emsland	230.07
Neckarwestheim-2	236.04
<u>Subtotal:</u>	<u>2.516.05</u>
Muelheim-Kaerlich	107.25
<u>Total:</u>	<u>2.623.30</u>

The table contains for each reactor established remaining generation amounts, which are calculated for each reactor according to:

- 1.) calculation for remaining lifetimes allowing for 32 calendar years, beginning with commercial operation, accurately calculated to the day
- 2.) calculation of a reference amount as average of the five highest annual production totals

- between 1990 and 1999 for each reactor (160.99 TWH/y for total reactors)
- 3.) allowance of an extra 5.5% of the reference amount
 - 4.) calculation of the total remaining generation as product of remaining lifetime and the reference amount multiplied by the 5.5% allowance.

ANNEX 2

BMU Declaration to RWE on Further Procedures for Backfitting of Biblis-A

Hesse regulators on 3/27/1991 required remedial measures for the safety backfitting of Biblis-A (Ed. note: following a loss-of-coolant precursor event. The backfits were never carried out). BMU reiterates its position that for operation of the reactor for several years backfits including a qualified bunkered emergency system are required for safety-technical reasons. BMU now is examining the extent to which Biblis-A can be safely operated until certain backfits are realized. The owner of the reactor will be notified of the result no later than the end of August.

BMU will by the end of August at the latest make clear to Hesse regulators the measures needed to expedite the licensing process. That will include a structuring of the process and a definition of criteria.

Should the owner declare that it will forgo transferring amounts of power to Biblis-A and also state definitely how much power the reactor will produce, a decision will be made within three months on a backfitting program appropriate for the remaining lifetime of the reactor and that will assure safe operation. The backfit requirements (Ed. note: from 1991) will be adjusted in this case. BMU will initiate the necessary discussions.

ANNEX 3

Overview of Periodic Safety Examinations (PSE) in Reactors

Reactor (commercial operation)	Safety- Status Analysis (SSA)	Probabilistic Safety Analysis (PSA)	Next PSE
Obrigheim ('68)	97	98	doesn't apply
Stade (72)	8/87	3/97	12/31/2000
Biblis-A (74)	2/91	2/91	12/31/2001
Biblis-B (76)	---	8/89	12/31/2000
Neckar-1(76)	12/98	12/94	12/31/2007
Brunsbuettel (76)	---	3/97	6/30/2001
Isar- 1 (77)	(10/94)	10/92	12/31/2004
Unterweser (78)	6/90	8/95	12/31/2001
Philippsburg-1 (79)	8/95	5/98	8/31/2005
Grafenrheinfeld (81)	10/98	4/96	10/31/2008
Krummel (83)	6/98	12/97	6/30/2008
Gundremmingen B/C (84)	12/97	6/93	12/31/2007
Grohnde (84)	---	8/98	12/31/2000
Philippsburg-2	10/98	6/98	10/31/2008
Brokdorf (86)	10/96	6/96	10/31/2006
Isar-2 (88)	9/99	6/99	12/31/2009

Emsland ('88)	12/98	4/98	12/31/2009
Neckarwestheim-2 ('88)	12/98	7/98	12/31/2009

ANNEX 4

According to Title 9a para.3 of the federal nuclear law, the federal government is responsible for establishing installations for disposal of radioactive materials. The federal government commits itself to this responsibility and declares it will take up the appropriate measures irrespective of the phase-out of nuclear energy to make sure that the appropriate capacities for disposal of waste are provided in a timely manner.

As potential host rock media, salt, as well as granite, clay, and other formations may be considered. In 1979 it was decided to explore the Gorleben salt dome as a possible repository site. The geological results thus far attained may be summarized accordingly:

The area consisting of older rock salt, which is foreseen for storing high-level waste (HLW), has shown to be greater than expected during the course of excavation of excavation area 1 (EB-1). However EB-1 does not suffice to store the predicted waste volume.

The analytically determined rate of rise of the salt dome permits the expectation that, with regard to possible rises it is not likely there will be any related dangers even in longterm time horizons (in the order of 1-million years). No appreciable pockets of solutions, gas, or condensates have been found. The previous findings, suggesting that the the area is a tight formation have been confirmed, including the expected function of the salt as a barrier. To this extent the obtained geological findings do not contradict the thesis that the Gorleben salt dome is a suitable site.

However, the federal government believes it necessary, in the light of ongoing international discussion, to rework and develop further the suitability criteria and the concept for disposal of HLW. The state of science and technology and the general risk evaluation have developed substantially during recent years; this has consequences for the further exploration of the Gorleben salt dome.

Above all, the following question marks pose doubts:

—The management of gas which may build up in dense rock salt as a result of corrosion and decomposition of the waste poses a special problem.

—The requirement that repositories allow retrievability of the radioactive waste is growing internationally.

—The suitability of salt as a medium should be compared with others, such as clay and granite, in the light of findings in other countries.

—For the geological disposal of spent fuel, additional criteria must be fulfilled, in order to exclude long-term recriticality.

—The International Commission on Radiological Protection will likely soon make public recommendations which for the first time include a radiation protection goal for non-intentional human penetration of a repository.

A further exploration of the Gorleben salt dome cannot contribute to the clarification of these outstanding questions. For this reason, the exploration of the Gorleben salt dome will be interrupted for at least three, and at most ten years; a clarification of the above questions will follow.

The moratorium does not imply that Gorleben will be given up as a site for a repository. But during the clarification of conceptual and safety technical questions no investments will be made which cannot contribute to clarification of these questions.

The federal government will take the necessary measures to maintain the Gorleben site during the moratorium. This will include the necessary legal steps to secure the position of the federal government as licensee and to secure the project from intervening third parties. The

federal government will take necessary measures such that the applied for 10-year extension of the concept operations plan for the exploration project will be approved. The federal government will ensure the plan is legally protected by an appropriate action according to Title 9 of the federal nuclear law.

ANNEX 5

Summary of Nuclear Law Revision

1.) Basic New Regulations

1.1) Purpose of law

—elimination of goal to promote use of nuclear energy
—orderly termination of use of nuclear energy for commercial generation of electricity, and the time of the ending of nuclear operation specified

1.2) Ban on licensing for construction and operation of new reactors

1.3) Research in the area of nuclear technology, especially for safety, remains unfettered

2.) Limitation of existing operating licenses

2.1) Termination of the right of operation for each reactor, when the foreseen remaining generation amounts in the Annex to the law is reached, including through transferring generation amounts.

2.2) Lifetime calculation

—Establishment of specific generation amounts for each reactor in an annex to the law
—The right to transfer each generation amount to other reactors according to the principles for an energy consensus

—Goal: from old to new reactors

2.3) Responsibility of each utility to report its monthly generation

2.4) Responsible authority for receiving the reports: BFS

3.) Safety standards

3.1) Current safety standards will be upheld

3.2) Establishing legal norms for periodic safety examinations

4.) Waste Management

4.1) Responsibility for erecting and using interim storage facilities at the reactors

4.2) Legal regulations for interim storage facilities

4.3) as of 7/01/2005:

—restriction of spent fuel management to direct disposal in repository

—ban on reprocessing according to IV/2.

4.4) Retention of language in the 1998 nuclear law revision (in Title 9) to secure the Gorleben site during moratorium

4.5) Adjustment of the rules for demonstrating forward planning of spent fuel management to conform with the contents of the agreement

5.) The new revision will supersede that passed in April 6, 1998, except for provisions to implement European Union law, and language in Title 9 (see 4.4).

6.) Increase in third-party liability coverage