

FUTURE OF NUCLEAR CONSULTATION

THE PROPOSED PROCESSES FOR JUSTIFICATION AND STRATEGIC SITING ASSESSMENT

CONSULTATION RESPONSE BY RWE NPOWER

1. RWE npower welcomes the Government's decision to consult on the proposed processes for Justification and Strategic Siting Assessment (SSA) satellite on a contingent basis pending the outcome of its main consultation on the future of nuclear power.
2. Should the Government confirm its preliminary view that investors should be given the option of investing in new nuclear power stations, Justification and SSA would play a key role in ensuring that the generic benefits and detriments of a new nuclear programme and site selection criteria have been properly considered in advance of a public inquiry. It seems likely that both processes will play a key role in formulating the national policy statement for nuclear which will form the basis for the consideration of applications for new plants which will be made to the proposed Infrastructure Planning Commission (IPC), which is expected to be created in April 2009.
3. In order for new nuclear to contribute to the Government's energy policy objectives in a timely fashion, it is vital that the national policy statement for nuclear power is in place when the IPC is formed. This in turns requires that the Justification and SSA processes are completed expeditiously.
4. Our responses to the questions posed in the Justification/SSA consultation are given below.

JUSTIFICATION

Question 1a: Are Government plans to structure the proposed Justification process by making a time-limited "call for applications" helpful?

5. ***The proposal for making a time-limited call for applications is helpful.*** It may allow the Justifying Authority to receive applications for similar reactor technologies at the same time and consider them together, which is more efficient in time and use of resource. It should also be recognised that this

proposal cannot prevent others from making subsequent applications under the Justification Regulations at any time.

6. We believe that the most efficient approach would be a single application covering an envelope of reactor technology that includes all four of the designs accepted for generic design assessment by the UK regulators. This could be a generic application, which would aim to demonstrate that the designs have sufficiently similar net benefits and radiological health detriments such that they can be viewed as falling within a common envelope for justification purposes. There should be a presumption that the consideration of such an application should be prioritised as they would represent the most realistic technology for UK implementation over the next 10 to 20 years.

Question 1b: Is the proposed application, assessment and decision-making process clear, appropriate and proportionate? If not, how can it be improved?

Proportionality of the Process

7. ***The UK process represents a disproportionately onerous approach and regulatory burden given the robust legal and regulatory framework that already exists to protect the safety and health of people and the environment.*** However, given that the UK Justification Regulations are in place, we believe that it should be incumbent on the Government to minimise the burden on potential applicants.
8. Justification is a high level assessment that takes place early in the decision-making process. It is designed to demonstrate, before a practice is introduced, that it will provide an overall positive benefit. The process is generic and not site-specific.
9. Although we welcome the publication of the proposed process, the proposed approach to Justification in the UK goes far beyond that used in other European countries. Annex A to this consultation response reviews the Justification processes in five other European Union countries (Germany, Finland, France, Sweden and Spain). It concludes that among these countries:

- The only generic decision relating to justification is a ban on the frivolous use of radioactivity through a national Radiation Protection Act or Ordinance, e.g. covering the use of radiation in toys or food.
- In all other cases involving nuclear installations, the Justification is covered by the licensing authority and is a part of the overall licensing procedure.
- In Finland and in France, the Justification exercise for nuclear installations is “embedded” in a more general licensing requirement calling for an overall evaluation of advantages and detriments. Justification is not addressed as an issue on its own. Instead, it constitutes one element within the overall evaluation of whether the individual plant meets the national requirements for radiation protection.
- In Sweden and in Spain, a licence is granted by the competent authority if the applicant can demonstrate that it has met the licensing prerequisites. In Sweden, this is mainly the as low as reasonably practicable (ALARP) principle; in Spain, it is compliance with national regulations and selected regulations of the country of origin of the design.
- In none of these countries is there a requirement for a potential developer to submit an application for justification in addition to submitting an application for a licence

Application Under Article 9

10. Furthermore, we note that a nuclear power technology covered by an application may in fact constitute an existing (already justified) practice. The process described does not contemplate this possibility.
11. The information that would need to be provided for the determination of whether the practice is an existing one and, therefore, already justified or new and to be justified would, in effect, be the same. We therefore believe that it would be appropriate for an applicant to apply under Regulation 9 of the Justification Regulations (for an existing practice), leaving it for the Justifying Authority to determine, in accordance with Regulation 12, whether the application falls to be considered under Regulation 9 or 10 (for a new practice).
12. This would enable the Justifying Authority to determine:

- What constitutes the relevant class(es) or type(s) of practice relevant to a particular Justification application;
- Whether this (or these) are new or existing;
- If existing, whether new and important evidence about the efficacy or consequences of the practice has been acquired which would warrant a review of its Justification; and,
- Whether new, or existing and a review is warranted, whether the practice is Justified by its economic, social or other benefits in relation to the health detriment it may cause - i.e. a Justification Decision.

Definition and Treatment of Health Detriments

13. We note that “health detriment” is not defined in the consultation. This term should be explained and clarification provided that it relates to any health detriment arising from exposure to ionising radiation (as defined in the EC Directive). We also believe that the scope of the health detriments which need to be considered as part of the justification decision should be made clear.
14. The process could usefully clarify that the test is, firstly, that there is a net benefit from the class of practice being assessed and, secondly, that this is greater than the radiological health detriment i.e. not all benefits need to be characterised if those that are described outweigh the health detriment.

Definition of Practice

15. It should not be taken as read that different reactor designs will be different “practices” for the purpose of the Justification Regulations. The regulations talk of a “new class or type of practice” not a particular design within a class or type of practice. The consultation refers to “nuclear power station technologies” while the NEXIA paper commissioned by BERR considers reactor systems. BERR should confirm the scope of “nuclear power station technologies” and whether it relates to classes of reactors or specific reactor designs. Guidance is required on how wide the class or type could be drawn.

Application Content

16. We would welcome guidance on the expected breadth and depth of the application. For example, would it be appropriate for any application to give very limited consideration of those aspects of the nuclear life cycle that are already justified (or will need to be justified (including waste disposal)), occur

outside the UK or are common to other major industrial activities (e.g. construction)?

17. Many of the aspects relevant to justification relate to parts of the fuel cycle away from the power station and so are likely to be common to all the technologies (including for nuclear stations currently operating in the UK). Hence, it would be helpful to highlight which aspects of the fuel cycle are already justified and need not be further addressed in the application (for example fuel manufacture and spent fuel transport).
18. We would welcome confirmation that an applicant may legitimately reference the information in the nuclear consultation document in addition to other reputable sources in drawing together an application.

Public Engagement Process

19. Given the role that Justification must play in ensuring that members of the public receive appropriate information and are consulted about the high level aspects of the safety of new nuclear power stations, full engagement with the public during the Justification process will be essential. We would welcome greater clarity on how the public engagement activities will work and the role of the applicant within any such engagement.

Question 1c: Is the indicative list of information, described in Appendix A, appropriate for applicants to be able to make applications?

20. The indicative list of information needs further development so that it can be as helpful as possible.

21. The Regulations require consideration of the potential health detriments arising from ionising radiation. In general, it would be helpful if a full list of the potential radiological health detriments that may arise could be provided in the published guidance. We would also welcome clarity about which non-health detriments should be considered.
22. It would also be helpful if a full list of the potential environmental benefits and detriments to be considered could also be provided. This would assist applicants in determining the relevance of aspects such as cooling water; air quality; chemical usage; noise; light; landscape and visual intrusion;

infrastructure; traffic and transport; waste generation; and, radiological effects on the environment.

Question 1d: The Government is planning, where possible, to consider concurrent applications for Justification (relating to new nuclear power station technologies) through a single Justification assessment process. Is the Government's proposal appropriate?

23. *This proposal is appropriate. However it is equally true that an application defined by a broad envelope of benefits and health detriments, within which a number of technologies could be shown to fit, should be suitable for a single Justification assessment to be made.*

Thus the benefits and detriments would not need to be tied closely to a particular technology. This point is not clearly drawn out in the consultation and it would be useful if the acceptability of such an approach to applications was confirmed.

24. Under such circumstances, where the technologies are assessed together, separate decisions in respect of each technology may not be necessary and the class or type of practice so justified could be defined more generically; thereby making any decisions more 'future-proof'.

Question 1e: Are there any other ways in which the draft Justification process can be improved? If so, we welcome your suggestions.

25. *We believe it would helpful for the Government to set a more detailed timetable for the process and ultimate decision,* especially for the public consultations on the application and the draft decision document. As part of this, it would be helpful to have further detail on how the information is to be publicised.

STRATEGIC SITING CONSULTATION

Question 2a: Is the proposed approach to the Strategic Siting Assessment a logical approach to identifying suitable sites? If not, how could it be improved?

26. We believe that the Strategic Siting Assessment (SSA) as proposed represents a key part of an overall strategy for the consideration of generic issues relating to a new nuclear build programme. As such it is extremely

important in removing uncertainty prior to an investor's decision to apply for planning consent and should provide reasonable assurance that a subsequent public inquiry is confined to the consideration and mitigation of local impacts.

27. In principle, subject to the development of appropriate exclusionary and discretionary criteria we believe that a phased SSA process as set out in the document represents a sensible approach. We also support the proposal to invite nominations for suitable sites which meet the criteria. This should ensure that developers have a wide choice of sites able to accommodate the likely scope of an initial new build programme. We also support the proposal that the SSA policy statement would not aim to provide a comprehensive list of suitable sites which precluded the later selection of other sites which might be suitable for future-build.
28. However, we believe that the list of exclusionary criteria should be carefully developed to genuinely reflect issues which would preclude new nuclear build (e.g. population density) and should not include issues which can be mitigated (e.g. grid connection) and are essentially for the developer to determine. We note that the discretionary criteria set out in table 3 in Appendix B of the Justification/SSA process consultation are extremely wide ranging and detailed. We are concerned that these are not strictly relevant to a high-level, generic assessment but seem more appropriate to a site specific environmental impact assessment (EIA).
29. Population-based exclusionary criteria will also be a key factor in determining site suitability. It is important that any review of the current criteria should take account of International and UK experience and the characteristics of the advanced international reactor designs likely to be deployed.

Question 2b: Does the proposed incorporation of Strategic Environmental Assessment into the Strategic Siting Assessment represent a reasonable and robust approach to assessing environmental issues that would be raised by the construction and operation of new nuclear power stations? If not, how could such issues be taken into account?

30. It seems likely that the policy or plan that emerges from the proposed SSA would subsequently require a Strategic Environmental Assessment (SEA) to be conducted with respect to alternative sites. We therefore support the view that the SSA should be conducted as part of an SEA.

31. It appears that the proposed incorporation of the SEA within the SSA process meets the requirements of the SEA regulations and therefore seems robust. The relative timescales and interactive nature of the two processes will however require careful management to ensure that there is adequate consultation and a sufficiently detailed environmental report whilst also maintaining the declared timetable that will be important for any new build programme.
32. One aspect that is not clear is the level at which the SEA process will be applied. It is recommended that this should be at the locality rather than the site level which seems appropriate for an essentially strategic process which is not intended to replace the requirement for a site specific environmental impact assessment.

Annex A

Summary description of approach to Justification in 5 other European Union countries¹

Council Directive 96/29/EURATOM of 13 May 1996 states that:

Member States shall ensure that all new classes or types of practice resulting in exposure to ionizing radiation are justified in advance of being first adopted or first approved by their economic, social or other benefits in relation to the health detriment they may cause. (Art. 6 Para 1)

The way in which this Justification requirement is met varies from country to country. This Annex looks at the way the Justification requirement is implemented in Germany, Finland, France, Sweden and Spain.

1. Germany

Germany has embodied the wording of the EU directive within the 2001 Ordinance on Radiation Protection. According to Article 4 of this Ordinance, a separate Ordinance (yet to be promulgated) will in future list activities which are not justified. In any subsequent licensing process, the licensing authority would have to check whether the activity which is the object of the application for a licence is mentioned in this ordinance. If yes, the licence cannot be granted. If not, the licence may be granted provided all the other conditions are met.

The ordinance containing the list of unjustified activities would, as with other such ordinances, be subject to consultation with competent authorities and relevant stakeholders. In the licensing process, the only point open to discussion on justification would be whether the project was or was not on the list established by Government.

The approach in Germany is therefore high level and generic. It falls to Government to determine a list of activities which are not justified and for the licensing authority to determine whether an application falls within the “not justified” list. Potential nuclear power developers are not required to submit applications for justification.

¹ **Acknowledgement:** this paper was prepared by E.ON Kernkraft GmbH based on information provided by experts in each of the countries.

2. Finland

In Finland, the justification principle has been taken into the 1991 Radiation Act, albeit with somewhat simpler wording:

To be considered acceptable, the use of radiation and practices involving exposure to radiation shall meet the following criteria:

1) The benefits derived from the practice shall exceed the detriment it causes (principle of justification)[...]

There is no reference to either new or existing classes and types of practice. When a licence for a nuclear activity or nuclear installation is applied for, it is up to the licensing authority to assess individually whether the benefits of the practice exceed the detriments it may cause.

For nuclear installations, such an assessment is performed as part of the “decision in principle” taken by Government (as advised by the nuclear regulator STUK) and endorsed by Parliament. According to Section 5 of the Finnish Act on Nuclear Energy, the Government has to confirm that the proposed use of nuclear energy is “in line with the overall good of society”. In practice, the decision about justification – that is, about the balance of benefits and possible radiation detriments – is seen as being addressed through this consideration by Government. Thus, if the Government’s “decision in principle” is favourable, the justification issue need not be discussed again in the ensuing steps of the licensing procedure.

The “decision in principle” is taken very early in the process following a high level consideration by Government. It is not design specific. In the procedure for Olkiluoto 3, no less than seven different designs were included within this decision. Thus in Finland the justification exercise does not call for a detailed technical or a quantitative approach. Nor does it require an application to be submitted from a potential developer.

The Government’s decision in principle is informed by a public consultation and a public hearing in the municipality where the installation is to be situated.

3. France

The requirements of the EURATOM directive have been incorporated into the French Public Health Act (code de la santé publique, art. L1333-1). The Act does not mention “classes or types of practice” but rather states that any “nuclear activity” can only be undertaken provided it is justified. Therefore, similar to

Finland, the decision about Justification is taken in each licensing procedure individually.

Again, similarly to Finland, there is a general precondition for issuing a licence requiring that, the benefits of the activity have to outweigh the detriments. At Article 29, the new Nuclear Act of 2006 provides that the basic licence for a nuclear installation (the “autorisation de creation”) cannot be issued unless the licensee proves that the technical or organisational measures he has taken or envisaged are likely to prevent or limit sufficiently the risks or drawbacks which the installation presents for the interests mentioned in I of Article 28. These interests are security, public health and salubrity, and protection of nature and the environment.

When applying for this basic licence (the “autorisation de création”), the applicant has, among many other things, to specify the benefits and possible detriments. Article L1333-1 calls for the balance to be established between on the one side benefits of all kinds (e.g. social, environmental, economic) and, on the other side, the “risks inherent in exposure to ionising radiation which the activity might cause for persons”.

The licence application is subject to a public debate (according to an Act of 1995 modified in 2002: articles L-121 1...of the environment code, concerning important projects in general), with the question of justification being one of many issues discussed there. There is a public inquiry during which the impact study (including impact on environment, health of persons, etc.) is submitted to the public.

In summary, in France justification is addressed within the licensing process for a plant rather than through a separate process requiring an application from a developer.

4. Sweden

In Sweden the Justification exercise is also carried out as part of the licensing procedure.

The approach in respect of nuclear activities or facilities is that permits are considered and if appropriate granted by the Government on the basis of a report written by the nuclear regulator SKI. When writing the report, SKI consults the radiation protection authority SSI.

The Justification principle is not explicitly stated in Swedish regulations. However Section 1 of the Radiation Protection Act (1988:293) states that the purpose of the Act is to protect humans, animals and the environment against harmful effects of radiation and the Ordinance on Radiation Protection contains a clause banning the use of radiation in certain products like food, toys etc.

Thus, a specific justification exercise is not required. Instead, the appraisal of benefits and detriments of the planned installation is part of the licensing process. The evaluation of the applicant's safety case is based, like the UK, on the ALARP principle and additionally on compliance with the new set of nuclear safety regulations.

5. Spain

In Spain, Article 4 of the 1999 Ordinance on Radiation Protection (*Reglamento sobre protección sanitaria contra las radiaciones ionizantes*) states:

Every new class or type of practice within the scope of this ordinance must be justified by the applicant before the competent authority which, after having informed the Nuclear Safety Council [the Spanish nuclear regulator], decides whether it will grant the licence for the activity, taking into due consideration the advantages which it represents in relation to the health detriment it may cause.

As a result the licensing authority (which, for nuclear power plants, is the Ministry for Industry, Tourism and Trade) has the remit to decide whether an application concerns a new class or type of practice and, if yes, whether the licence can be granted. Normally, the licence will be granted if the licensing conditions are met. The main prerequisite is that the installation complies with the applicable national regulations as well as selected regulations and standards of the country of origin of the design.

Again justification is covered within the licensing process for the plant and there is no requirement for a separate application from a developer.

6. Conclusions

Among these five countries, the only generic decision relating to justification is a ban on the frivolous use of radioactivity through a national Radiation Protection Act or Ordinance, e.g. covering the use of radiation in toys or food.

In all other cases involving nuclear installations, the Justification is covered by the licensing authority and is a part of the overall licensing procedure.

In Finland and in France, the Justification exercise for nuclear installations is “embedded” in a more general licensing requirement calling for an overall evaluation of advantages and detriments. Justification is not addressed as an issue on its own. Instead, it constitutes one element within the overall evaluation of whether the individual plant meets the national requirements for radiation protection.

In Sweden and in Spain, a licence is granted by the competent authority if the applicant can demonstrate that it has met the licensing prerequisites. In Sweden, this is mainly the ALARP principle; in Spain, it is compliance with national regulations and selected regulations of the country of origin of the design.

In none of these countries is there a requirement for a potential developer to submit an application for justification in addition to submitting an application for a licence.

**RWE npower,
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