

## **NATIONAL DOSE ASSESSMENT WORKING GROUP**

### **PAPER 12-04: ARRANGEMENTS FOR AUTHORISATION REVIEW AND VARIATION IN ENGLAND AND WALES**

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#### **Before 2004**

Until 2004 there was no legal requirement on the Environment Agency to review authorisations. The Environment Agency had taken the view that a review should occur about every 4 to 5 years. The terms review, revision and variation were all used to describe the same overall process which took place.

Often there were gradual changes to practices, processes and activities on sites not in themselves sufficient to trigger a review and sometimes needed changes to authorisations were stored up over a few years until the next planned review.

The review/variation process then became a substantial resource requirement taking 2-3 years to complete in some cases. Wide scale consultation including with FSA and public participation were included. The Environment Agency usually made a full fresh radiological assessment. The demand on resources for Regulators and Operators was such that reviews/variations were not carried out for much more than 5 years.

#### **Current arrangements for authorisation review**

The 2004 Energy Act introduced a new legal duty on the Environment Agency (RSA93 section 17A) for “periodic reviews of the conditions and limitations” attached to authorisations. RSA93 defines ‘periodic reviews’ as reviews at such regular intervals as the Environment Agency thinks fit for that authorisation.

For nuclear sites the Environment Agency has decided as a matter of policy to conduct reviews of all RSA authorisations at annual intervals.

The variation of an authorisation is a separate process covered by section 17 of RSA93. Authorisation variation may be initiated by the outcome of the review.

The approach to reviews is proportionate and allows Nuclear Regulators flexibility to address specific concerns without being overly time consuming. It is estimated that the whole review process is taking between 1 and 5 regulator days per site, depending on the complexity of the site.

- Reviews are being conducted, so far as possible, as part of normal regulatory interaction with sites;
- There is no prescription concerning the time of year for reviews – wider processes involving the operator, NDA (if appropriate) and/or the Environment Agency usually influence this;
- Reviews look at past performance, but concentrate on the operator's future needs and the importance of the authorisation continuing to properly protect the public and the environment;
- A standard proforma is used to guide and record the review;
- As part of the review the operator, HSE, FSA and NDA (if appropriate) are given the opportunity to advise of anything that they feel should be taken into account. Consultation on the reviews is limited to these bodies;
- Reviews are carried out on the basis that they may be made available to wider stakeholders. However, any decisions to do this are taken at local level.

The review process includes a review of any changes brought to the attention of the regulator which may affect the impact of the authorised disposals on man and the environment. These may include changes to nuclide mix in the discharges, changes to local pathways, changes to receptors and changes to other factors that might affect behaviour of radionuclides in the environment. Periodic habit surveys will identify changes to habits which capture changes to receptors and other factors. Up to date habit data will be included in retrospective dose assessments as reported in RIFE. The retrospective dose assessments will therefore contribute to this stage of the process and will factor in changes to habits as they occur.

The review process does not always lead to a variation in the authorisation and some authorisations will remain unvaried for a number of years.

### **Variation process**

The Environment Agency is now reviewing its own authorisation determination and variation processes. They are expected to remain largely the same in principle but will aim to be proportionate and for the extent of consultation to be appropriate to the size and activities on the site and the impact of the proposed authorisation or variation.

#### *Dose assessment*

Prospective radiological assessments of the impact of discharges on man and on the environment will be made to support the variation process.

#### *Doses to man*

When an authorisation is varied, the Environment Agency will undertake a screening dose assessment using the initial assessment system. If doses are below 20 uSv/y it is unlikely that a full site specific detailed dose assessment will be required. If doses are greater than 20 uSv/y then the Environment Agency will consider the need for a more complete site specific dose assessment.

The Environment Agency intends to maintain site specific systems for radiological assessment at those sites where the screening assessment of authorised discharges indicates doses are > 20 uSv/y. These systems will be kept up to date with new habit data and modelling assumptions allowing the site regulator to have site specific assessments for authorisation discharge in support of proposed variations.

The site specific systems for radiological assessment could also be used to support the authorisation review activity, in particular where doses are greater than 20 uSv/y and variations have not been made for several years.

#### *Doses to the environment*

The initial screening assessment is to be extended to cover non-human species. Where absorbed doses to organisms exceed 1 uGy/h a fuller assessment maybe made. This will take into account all other discharges to ensure that the total dose rate is below the criteria (currently 40 uGy/h).

### **Environment Agency interaction with FSA**

#### *Authorisation review*

The Environment Agency informs FSA by letter at the start of each review. The FSA is advised that the Environment Agency proposes to carry out a review of a nuclear site authorisation. The FSA will be invited to cooperate in the review and advise of anything it wishes to be taken into account. The Environment Agency only consults FSA, NDA and HSE on reviews. The Environment Agency may make the outcome, possibly in summary form, known to local stakeholders.

If the outcome of the review leads to a proposed variation to the authorisation, then all relevant stakeholders would be consulted.

#### *Authorisation variation*

Either the site operator may apply for a variation or the regulator may initiate one. This application or proposal is passed to FSA. The Environment Agency then prepares a draft authorization taking into account views from FSA and HSE. An explanatory document (ED) is then prepared in support of any draft proposed variation. FSA and HSE are given the opportunity to comment on the ED before formal consultation begins. After consultation a decision document (DD) is prepared containing the final version of the authorization and views are taken from the FSA and HSE again. The DD is

finalised, published and the authorisation issued.

The authorisation variation process is currently being reviewed and is expected to be revised in due course. It is not expected to be fundamentally changed.

## **Moves towards consistency in dose assessments between SEPA, EA and FSA.**

The Environment Agency, SEPA and FSA have moved towards an agreed and consistent methodology for making retrospective assessments of total dose. The method was agreed and presented to NDAWG and is now used for most nuclear sites (Ref 1,2). Total doses are reported annually in RIFE (Ref 3)

For prospective assessments interim guidance on principles for assessing doses to the public was published in 2002 by the regulators, FSA and NRPB (Ref 4). Subsequently, the FSA and EA have agreed to consult each other on key input data for the prospective assessment process. The key input data that require agreement are given below:

*For atmospheric assessment*, the key input data are effective stack height, separation of the stacks and release points from the receptors and potential critical group locations. At most sites, the authorisations include a generic category or categories that do not specify radionuclides by name. Where this is the case the radionuclide to be used in the assessment should be specified and agreed.

*For liquid release assessments*, the key input data will be limited to those sites where the authorisations include a generic category that does not specify a nuclide by name. Where this is the case the radionuclide to be used in the assessment should be specified and agreed.

The EA and FSA have compiled the key input data they have used in nuclear site assessments made to date and will review and agree the data to provide an agreed reference input set.

### **FSA process**

The FSA involvement in the process for granting a new<sup>1</sup> Authorisation to an existing nuclear licensed site to discharge gaseous or liquid radioactive waste into the environment is summarised below. The process for the consideration of applications for the disposal of solid radioactive waste or the transfer of waste is not considered here.

Process for the consideration of Authorisations for non-nuclear licensed sites and for sites where there is not a pre-existing Authorisation are similar but simpler than those described here.

### **FSA process in England & Wales**

- The Environment Agency (EA) carry out periodic reviews of the site's Authorisations

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<sup>1</sup> In this context a significantly revised or amended Authorisation is considered in the same way as a new Authorisation.

- As part of this review the FSA is asked for its comments
- The FSA will examine the results from its monitoring programme, information from habits surveys and other information that may have been received since the current Authorisation was granted
- The FSA will use this information to consider whether the conclusions of its most recent assessment remain valid<sup>2</sup>.
- The FSA will respond to EA with the results of its considerations
- The EA will decide whether a new Authorisation is required taking into account the comments received from the FSA, the site operators and others
- In the unlikely event that the FSA believed that a new Authorisation was required but the EA disagreed the FSA would consider asking the Secretary of State for Health to make use of his power of direction.
- If the EA believe that there should be a new Authorisation they will invite the site operator to apply for a new Authorisation.
- The site operator will provide supporting information to the EA as part of the application. This information will be copied by the EA to the FSA
- If the FSA requires further information the EA would be requested to obtain this from the site operator.
- The EA will propose a new Authorisation including discharge limits.
- The EA will consult with the FSA and other statutory consultees on the contents of the proposed new Authorisation.
- As part of this consultation process the FSA will carry out an assessment of the impact of the proposed revised Authorisations. This assessment will be carried out with the EA's Radiological Monitoring Assessment (National Operations Group) team. This will include the agreement of the information that the FSA and EA assessments will be based on. If necessary the EA will seek clarification of the information from the site operator.
- Once the FSA has carried out its assessment<sup>3</sup> it will produce a report detailing its assessment and conclusions. This assessment then forms part of the information package that the EA uses as the basis of its public consultation.
- The EA will consider the comments received from the public consultation process and will make a decision whether to issue the proposed Authorisation or a modified version of it.
- Once the EA has reached its decision it will produce a Decision Document that will include responses to issues raised during the public consultation. If issues relating to food safety were raised during the consultation the FSA will provide text to cover these for inclusion in the Decision Document
- The EA will formally ask the FSA if it is content with the Authorisation that it intends to issue.

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<sup>2</sup> It should be noted that the FSA would not wait for a review of the Authorisation if results from monitoring or other information indicated that there was a "problem" with the current Authorisation.

<sup>3</sup> It may be necessary to repeat the assessment or part of the assessment if the EA change the contents of the proposed Authorisation.

- In the unlikely event that the EA were to decide to issue an Authorisation that the FSA was not content with the FSA would consider asking the Secretary of State for Health to make use of his powers of direction on the EA.

### **FSA process in Scotland**

- Currently, SEPA reviews authorisations on a case by case basis, either at the request of the operator or SEPA. However, SEPA is moving toward a formal 5-yearly review process.
- If SEPA or the site consider that a new Authorisation is needed, the site operator will supply information that would be required for make an application to SEPA. This information includes details of discharges, form of release and environmental monitoring and impact assessment.
- SEPA then consults statutory consultees which includes the FSA on the site operator's application as opposed to the proposed Authorisation.
- The site operator will provide supporting information to SEPA as part of the application. This information will be copied by SEPA to the FSA.
- The FSA will carry out an assessment of discharges at the limits that the site operator has requested.
- Once the FSA has carried out its assessment it will produce a report detailing its assessment and conclusions. This assessment then forms part of the information package that SEPA uses as the basis of its public consultation.
- The SEPA will consider the comments received from the public consultation process and will make a decision the contents of the new Authorisation.
- Once SEPA has reached its decision it will produce a Decision Document that will include responses to issues raised during the public consultation. If issues relating to food safety were raised during the consultation the FSA will provide text to cover these for inclusion in the Decision Document
- SEPA will formally ask the FSA if it is content with the Authorisation that it intends to issue.
- In the unlikely event that SEPA were to decide to issue an Authorisation that the FSA was not content with the FSA would consider asking the Scottish Health Ministers to make use of their powers of direction on SEPA

### **References:**

- 1) Allott R 2005. Assessment of compliance with the public dose limit. Principles for the assessment of total retrospective public doses. NDAWG/2/2005. [www.ndawg.org.uk](http://www.ndawg.org.uk)
- 2) Camplin WC, Grzechnik M and Smedley C. 2005. Methods for assessment of total dose in the Radioactivity in Food and the Environment Report. NDAWG/3/2005 [www.ndawg.org.uk](http://www.ndawg.org.uk).

- 3) Environment Agency, Environment and Heritage Service of Northern Ireland, Food Standards Agency and SEPA 2007 RIFE-12. Radioactivity in Food and the Environment report for 2006.
- 4) Environment Agency, Scottish Environment Protection Agency, Department of Environment, Northern Ireland, National Radiological Protection Board and the Food Standards Agency. 2002. Authorisation of Discharges of Radioactive Waste to the Environment Principles for the Assessment of Prospective Public Doses Interim Guidance.