



SCOTTISH ENVIRONMENT PROTECTION AGENCY

RADIOACTIVE SUBSTANCES ACT 1993

**Application by EDF Energy Nuclear Generation Limited for Changes to
the Authorisation covering the disposal of Radioactive Wastes from
Hunterston B and Torness Power Stations**

**CONSULTATION DOCUMENT FOR
DISCRETIONARY CONSULTEES
AND THE PUBLIC**

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1 SUMMARY

SEPA has received applications to amend the authorisations held by EDF Energy Nuclear Generation Limited (EDF) for Hunterston B and Torness power stations under the Radioactive Substances Act 1993 (RSA93). Determination of these applications requires consultation with a number of organisations and the wider public. This document supports this consultation.

Responses to the consultation should be sent in writing to the address below no later than 3 October 2014.

The Registrar
Scottish Environment Protection Agency
Angus Smith Building
Parklands Avenue
Eurocentral
Holytown
North Lanarkshire
ML1 4WQ

Or

registry.angusmith@sepa.org.uk

All responses will be made public unless a respondent specifically asks for their response to be treated confidentially. Confidential responses may be included in any statistical summary of numbers of responses received or views expressed. Respondents should be aware that SEPA is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under that Act for information relating to responses made.

2 PURPOSE OF THIS DOCUMENT

The Scottish Environment Protection Agency (SEPA) has received applications from EDF Energy Nuclear Generation Limited (EDF) to amend the existing Radioactive Substances Act 1993 (RSA93) Authorisations for the disposal of radioactive wastes from their sites at Torness and Hunterston B Power Stations. In determining applications such as these from Nuclear Licensed Sites (NLS), SEPA is required by RSA93 to undertake consultation with various bodies before making a decision on whether or not to grant the changes.

There are various stages to the consultation and this document supports the second stage of the consultation, which is often referred to as the “Discretionary (or Public) Consultation”. The document aims to ensure that consultees understand why they are being consulted and what they are being consulted on. It summarises SEPA’s specific remit and process for the determination of applications under RSA93 for NLS in Scotland and sets down the general framework in the UK and European Community within which SEPA will determine whether or not to grant the changes requested by the applicant. This document must be read in conjunction with the application (see Appendix 1 & 2).

Your comments are being sought by SEPA as part of the ‘Discretionary Consultation’ on this application. Further detail on the consultation process is given later in this document.

In undertaking this consultation SEPA is looking for information relevant to this application. Specifically SEPA would like to be informed of any matters that your organisation, or you as an individual, are aware of that could influence SEPA’s decision to grant the changes requested by EDF. It is, however, considered important by SEPA that consultees are not in any way influenced by its own opinion on the application. The aim of this document is simply to summarise the application to aid consultees’ understanding of it and to give an outline of the framework within which SEPA will make its determination.

2.1 Consultation Process

Persons wishing to dispose of radioactive waste in or from Scotland must hold an Authorisation granted under RSA93 by SEPA. Any proposed changes to this Authorisation will be determined in accordance with SEPA’s own procedure. This procedure will include a staged consultation, and this document supports the second stage of the consultation.

The consultation process is a five stage process.

Consultation Stage 1

Section 16 4a of RSA93 requires SEPA to consult with the Food Standards Agency (FSA) and Health and Safety Executive (HSE) whenever a duly made application is received by SEPA from a NLS. Further administrative arrangements are in place to consult the Scottish Government (SG) to ensure that Scottish Ministers (SM) have the opportunity to exercise their powers under Sections 23, 24 or 25 of RSA93.

SEPA completed this stage of the consultation process in March 2014, and the responses received from this first stage are included as Appendices 5, 6 and 7. No objections were raised in the initial consultation phase.

Consultation Stage 2

The second stage of the process is in line with the requirements of section 16 (5) of RSA 93 which requires that SEPA consults with such public bodies and organisations as it sees proper to consult before granting an Authorisation. Although there is no requirement in RSA93 to undertake public or discretionary consultation in relation to varying an Authorisation, SEPA believes there is genuine public expectation that this will be carried out with regard to substantial changes. The second stage is often referred to as the 'Discretionary Consultation'. This document presents information in support of the 'Discretionary Consultation' and seeks your comments as part of the 'Discretionary Consultation' on the proposed changes to the Authorisation for radioactive waste disposals from Hunterston B and Torness. The public bodies and organisations that SEPA has decided to consult with during this stage are listed below.

SEPA is specifically consulting with the following bodies:

Hunterston B Power Station	Torness Power Station
Scottish Natural Heritage	Scottish Natural Heritage
Environment Agency	Environment Agency
Scottish Water	Scottish Water
Public Health England	Public Health England
Committee on Medical Aspects of Radiation in the Environment (COMARE)	Committee on Medical Aspects of Radiation in the Environment (COMARE)
North Ayrshire Council	City of Edinburgh Council, East Lothian Council, Mid Lothian Council, Borders Council
Ayrshire and Arran Health Board	East Lothian Health Board
Hunterston Site Stakeholder Group	Torness Technical Local Liaison Committee

It is also SEPA practice to invite comment from the wider public. To this end the consultation is being advertised in:

Hunterston B Power Station	Torness Power Station
The Edinburgh Gazette	The Edinburgh Gazette
The Herald	The Scotsman
The Largs and Millport Weekly News	The East Lothian Courier

The consultation package also can be viewed on SEPA's website and copies are available at the following SEPA offices.

Edinburgh
Clearwater House
Heriot Watt Research Park
Avenue North
Riccarton
EH14 4AP

Angus Smith Building
Parklands Avenue
Eurocentral
Holytown
North Lanarkshire
ML1 4WQ

Ayr
31 Miller Street
Ayr
KA7 2AX

Your response to this consultation must be returned, in writing, to the following addresses:

The Registrar
Scottish Environment Protection Agency
Angus Smith Building
Parklands Avenue
Eurocentral
Holytown
North Lanarkshire
ML1 4WQ

Or

registry.angusmith@sepa.org.uk

Normal practice is to allow an 8 week period for this stage of the consultation. In this instance 12 weeks has been allowed due to the consultation being conducted during the summer period.

Responses should be made to SEPA by 3 October 2014 at the above address. Following the closing date, all responses will be considered prior to the determination of the changes.

It should be noted that all responses will be made public unless a respondent specifically asks for their response to be treated confidentially. Confidential responses may be included in any statistical summary of numbers of responses received or views expressed.

Respondents should be aware that SEPA is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under that Act for information relating to responses made.

Consultation Stage 3

A draft of the changes SEPA is minded to make will be sent to the applicant for comment.

Consultation Stage 4

The fourth stage is consistent with the requirements of RSA93 section 17 2A. This section requires further consultation with the FSA on the terms of a variation or Authorisation SEPA proposes to grant. In addition, SEPA's consultation process includes consultation with ONR under formal working arrangements.

Consultation Stage 5

The final consultation is with Scottish Ministers who have powers to direct SEPA to add, remove or alter any condition or limit specified in the variation. To support this consultation, SEPA produces a decision document which records the changes and sets out SEPA's considerations and the rationale for making the changes.

The decision document will include reference to the responses from the all stages of the consultation and will be made available on SEPA's web site at the end of the process.

3 SEPA'S REMIT

Section 13 of the RSA93 makes it an offence to dispose of any radioactive waste, or permit it to be disposed of, unless it is in accordance with an Authorisation granted under that Section, or it falls into one of the categories of radioactive waste specifically exempted from the requirements of this Section. SEPA is the body in Scotland charged with granting authorisations under Section 13.

4 PROPOSED CHANGES

This section is intended to provide some background information to assist consultees and members of the public to understand the information provided by EDF as part of its applications.

4.1 Background to Current RSA93 Authorisations for Torness and Hunterston B Power Stations

Hunterston B Power Station was commissioned in 1976 and generates electricity from two Advanced Gas-cooled Reactors. It is located on the West Coast of Scotland on the Hunterston Peninsula, which forms part of the Ayrshire coastal plain.

Torness Power Station was commissioned in 1986 and generates electricity from two Advanced Gas-cooled Reactors. It is located on the East Coast near to Dunbar.

At the present time, EDF holds Certificates of Authorisation authorising the disposal of radioactive waste from both Hunterston B Power Station (certificate number RSA/A/0070022) and Torness Power Station (certificate number RSA/A/0070116). The Authorisations were granted to British Energy Generation Limited in June 2007 and are very similar.

On 1 July 2011 the name of the registered company holding the Authorisations changed from British Energy Generation Limited to EDF Energy Nuclear Generation Limited. However, as the registered company number (03076445) did not change, the Authorisation Holder remained the same legal entity, and there was no need to change the Authorisation to reflect this change.

Each of the Authorisations has been varied twice since they were issued. These variations were in 2011 and 2012. The first variation made some minor amendments to the Authorisation and to the available routes for solid waste disposal. The second added an additional gaseous discharge outlet to allow the testing of valves for nuclear safety. Copies of the original Authorisation and both Notices of Variation have been included in Appendices 3 and 4.

Individual applications were made to amend the Authorisations for each station; however, SEPA has decided to carry out a joint consultation covering both stations for the following reasons:

- the current Authorisations and associated variations are very similar;
- the requested changes are the same; and
- combining the consultations reduces the burden on consultees who require to be consulted regarding both Authorisations.

Where appropriate, any station specific details are highlighted.

4.2 Proposed Changes to the Authorisations

EDF made application to change the Authorisation's for issued to Hunterston B and Torness Power Stations in December 2013. The applications were deemed to be Duly Made by SEPA on 12 December 2013.

The proposed changes relate principally to the disposal of radioactive waste by transfer to another person and to the acceptance of radioactive waste on to the Authorised Premises

from other EDF nuclear power stations. The application did not request any changes to the existing authorised gaseous or liquid effluent discharge limits.

Further details on the reasons EDF is seeking these changes can be found in their supporting document “Application to vary Hunterston B Power Station’s Certificate of Authorisation Allowing for the Disposal of Radioactive Waste (reference HPS/TSSD/ES/DR2240) and “Application to vary Torness Power Station’s Certificate of Authorisation Allowing for the Disposal of Radioactive Waste (reference TOR/RSA/VARIATION/2013)”. Copies of these documents are given included in Appendix 1 and 2.

4.2.1 Low Level Waste Disposal Arrangements

EDF has applied to allow the disposal of low level radioactive wastes (LLW) to facilities which are not specified in the current Authorisations but which have appropriate permits to accept the waste. These facilities may not be based in the UK.

Historically, SEPA’s Authorisations issued to NLS have specified the site of destination for any radioactive waste removed from the NLS. Any proposed changes or deviation from the specified route required Authorisation Holders to apply to SEPA for a variation to their Authorisation. Such changes were typically deemed to be substantial by SEPA and therefore required public consultation. This delayed the opening up of the new disposal routes for the Authorisation Holder and resulted in significant administrative burden on both the Authorisation Holder and SEPA.

However, in May 2012 SEPA amended this position with the publication of the document “SEPA Policy on the Regulation of Disposal of Radioactive Low Level Waste from Nuclear Sites”. The document can be obtained from SEPA’s website. This new position can be summarised as follows:

“SEPA will authorise the disposal of LLW from nuclear sites to any person that is lawfully entitled to accept and to treat and or dispose of that waste providing that the selected disposal option is the “best practicable means” for disposing of that waste. Therefore, it will be necessary for the disposer to evaluate the options for the treatment and disposal of their wastes to ensure that “best practicable means” are being applied to dispose of that waste. We will check compliance with this requirement through routine inspection, in the same way that we check compliance with all of the other authorisation requirements. We will also require prior notification before new transfer routes are utilised.”

In addition disposals of radioactive waste outside of the UK are carried out in accordance with the Transfrontier Shipment of Radioactive Waste and Spent Fuels Regulations 2008. SEPA is the competent authority for these regulations in Scotland.

In order for an NLS to take advantage of this position, the guidance required the Authorisation Holder to make application to SEPA.

Question: Do you have any comments on the proposed changes to the Authorisation for disposal of Low Level Wastes from Hunterston B and Torness, in particular the removal of specified destinations?

4.2.2 Higher Activity Waste Arrangements

EDF have applied to allow the disposal of higher active radioactive wastes (HAW), including Intermediate Level Waste (ILW), to a number of named facilities as well as facilities that

might develop in the future, both within and outside of the UK. This is a similar approach to that adopted for LLW.

Historically, SEPA has adopted a different approach to authorising ILW disposals by specifying the waste type and the destination site as well as often imposing activity limits on the waste that could be disposed of. Decisions to authorise such disposals were taken on a case-by-case basis.

Disposal of this type of waste are subject to Scotland's Higher Activity Radioactive Waste Policy, which was published by Scottish Government in 2011. The policy is discussed further in section 6.2.2.

Question: Do you have any comments on the proposed changes to the Authorisation for the disposal of higher activity radioactive wastes from Hunterston B and Torness?

4.2.3 Removal of Limits and Physical/Chemical Descriptors

EDF has applied to remove the authorised limits relating to radionuclide and activity as well as the specification of physical and chemical characteristics for radioactive wastes being disposed of by transfer to another facility.

In accordance with the document "SEPA Policy on the Regulation of Disposal of Radioactive Low Level Waste from Nuclear Sites", available from the SEPA website, SEPA does not envisage imposing activity limits in relation to specified radionuclides (or groups of radionuclides) to the disposal by transfer of LLW, as has been done historically, in the majority of Authorisations. SEPA believes that such disposals are sufficiently controlled by adherence to the receiving person's Waste Acceptance Criteria, which will be specified as part of that person's permit. Nevertheless, SEPA retains the right to specify activity and radionuclide limits on a case-by-case basis, if it deems it necessary.

Question: Do you have any comments on the proposed changes to remove the limits and physical/chemical descriptors from the radioactive waste disposed of by transfer from the Authorisation for Hunterston B and Torness?

4.2.4 Arrangements to Receive Radioactive Waste from Other Premises

EDF has applied to allow the receipt of radioactive waste on to both stations for interim storage and onward disposal. These wastes will have arisen at other EDF Energy nuclear power stations, and the intention is to allow for the accumulation of economic loads prior to disposal.

The accumulation of radioactive waste at an NLS is exempted from control under RSA93, and hence is outwith SEPA's control. It is the responsibility of ONR to regulate such storage on an NLS. The subsequent disposal of radioactive wastes received from other premises from the NLS is, however, a matter for SEPA and the Authorisation.

As part of the Stage 1 consultation, SEPA wrote to ONR to seek their views on EDF's proposals. ONR's full response is included as Appendix 6. Specifically in response to this proposal to accept radioactive waste from other EDF nuclear power stations, ONR stated:

“ONR has no objection to this request provided there are no significant adverse operational impacts for the receiving site. An acceptable safety justification would need to be in place covering all relevant aspects and ONR would need to be satisfied concerning the safety, security, safeguards and transport implications (where relevant) of any transfer.”

Question: Do you have any comments on the proposed changes to the Authorisation for the acceptance of radioactive wastes at Hunterston B and Torness from other EDF Energy stations?

4.2.5 Proposal to Update the Name of the Authorisation Holder

EDF has applied to change the name of the Authorisation Holder from British Energy Generation Limited to EDF Energy Nuclear Generation Limited. This will reflect the change in company name although not company number discussed in section 4.1. The proposed change would remove any potential confusion regarding the identity of the Authorisation Holder and improve EDF’s corporate branding of all their permits.

Question: Do you have any comments on the proposal to change the name appearing on the front page of the Authorisation for Hunterston or Torness?

4.3 SEPA Standard Conditions

Since the extant Authorisation was issued SEPA has evolved its standard template of schedules of conditions and limitations for use in civil nuclear site RSA93 Authorisations. A copy of this template is attached as Appendix 8. The main changes include requirement for Radioactive Waste Advisers in place of the existing Qualified Experts, the explicit authorisation for samples of radioactive waste to be sent away for analysis, provisions for the remediation of radioactive contamination and changes to the type and frequency of specified information requirements.

It is SEPA’s proposal to closer align the Authorisation with the RSA93 Authorisations standard template now granted to the nuclear sector. If SEPA decides to vary the existing Authorisation, the intention will be to vary in the schedules of standard conditions from the template. The existing limits for gaseous and aqueous discharges will be transferred into the new schedules without change.

Question: Do you have any comments on the proposed changes to the Authorisation, in particular the importation of standard conditions from the SEPA template for nuclear Authorisations?

4.4 Determination Process

SEPA will consider the proposed changes and arrive at its decision on whether or not to update the Authorisations, basing its decision upon consideration of the following:

1. Details contained in the documents forming the consultation package
2. Responses from consultees and members of the public
3. Principles of Radiological Protection (as discussed in section 5)
4. Relevant Government Policy (as discussed in section 6)

SEPA will take cognisance of any changes to Government Policy and legislation that occur during the determination period.

If SEPA is minded to change the Authorisations, then the conditions and limitations of the Authorisations will be set having due regard to any comments received during the consultation and any further information that SEPA may seek as part of its determination process.

5 RADIOLOGICAL PROTECTION PRINCIPLES

The regulation of radioactive substances is based on the principles of radiation protection proposed by the International Commission of Radiological Protection in their publication ICRP 60. For radioactive substances, the system of protection is based on three principles:

- Justification
- Optimisation
- Dose Limitation

These principles have been adopted in international and national legislation regarding the control of radioactive substances. SEPA has responsibilities for ensuring that these principles are implemented appropriately and does this through the conditions and limitations it attaches to RSA93 Authorisations.

5.1 Justification

The requirement for justification is satisfied by the Justification of Practices Involving Ionising Radiation Regulations 2004 and is regulated by Government. Consequently, this is not a matter for consideration in this consultation.

These regulations also make provision for the maintenance of a register of justification decisions. As part of its routine procedure for assessing applications under RSA93, SEPA ensures that practices resulting in exposure to ionising radiation are justified. If practices are not found on the register of justified practices, or the list of existing practises maintained by Government, then the application for an RSA93 Authorisation will be refused.

The list of existing practices includes "generation of electricity by nuclear reactors - operation of advanced gas-cooled power stations". The operations at both Torness and Hunterston B fall within this type of practice, and therefore, satisfy the justification requirement.

5.2 Optimisation

ICRP 60 states the principle of optimisation as:

"In relation to any particular source within a practice, the magnitude of individual doses, the number of people exposed, and the likelihood of incurring exposures where these are not certain to be received should be kept as low as reasonably achievable, economic and social factors being taken into account."

SEPA has responsibilities for optimisation and was directed by Scottish Government in the Radioactive Substances (Basic Safety Standards) (Scotland) Direction 2000 to ensure that exposures to ionising radiation of any members of the public and the population as a whole resulting from the disposal of radioactive waste are kept as low as reasonable achievable (ALARA), economic and social factors being taken into account.

The SEPA guidance document "Satisfying the ALARA Requirement and the role of Best Practical Means", available on SEPA's website, provides details how SEPA discharges these responsibilities, and associated considerations, through the application of Best Practical Means (BPM). It provides clarity on what is meant by BPM and how SEPA uses it to keeping ionising radiation exposures to the public ALARA. It is standard practice to define BPM and include conditions requiring the application of BPM in RSA93 Authorisations. These conditions:

1. minimise of the volume and activity of radioactive waste generated;
2. minimise of the total activity of radioactive waste that is discharged to the environment; and
3. minimise the radiological effects of radioactive discharges on the environment and members of the public.

The standard conditions dealing with BPM and can be seen in our standard template document in Appendix 8.

5.3 Dose and Risk Limits

Exposure to ionising radiation can cause cancer and hereditary defects. The higher the radiation dose, the greater the likelihood or risk that a cancer or hereditary defect will develop. But, apart from very high levels of radiation dose, there is no certainty that an individual exposed to radiation will suffer a health effect. The dose/risk relationships have been determined by studies on various groups that have been exposed to radiation, predominantly survivors of the atomic bombs in Japan and certain medical patients.

There is little evidence that very low doses of radiation can cause harm. However, the approach taken in radiation protection errs on the side of caution by assuming that there is no dose so low that it cannot potentially cause harm and there is no absolutely safe threshold of radiation dose below which the risk may approach zero. In the present state of knowledge it is appropriate to assume an increasing risk with increasing dose. This approach is accepted by the ICRP and by national bodies such as Public Health England.

The Radioactive Substances (Basic Safety Standards) (Scotland) Direction 2000 requires SEPA when discharging its functions in relation to the disposal of radioactive waste under RSA93 to ensure that the dose limits for members of the public set out in Article 13 of Council Directive 96/29/EURATOM are not exceeded. The dose limit is set at 1 millisievert in a year (excluding medical irradiation) which is estimated to equate to a risk of death from fatal cancer of 1 in 20,000. The Direction to SEPA also requires that the contribution to public dose arising from the authorised radioactive discharges of any one new nuclear installation should be constrained to a maximum of 0.3 millisievert in a year which equates to a risk of approximately 1 in 66,000. In addition where a number of nuclear facilities are adjacent, possibly owned by different organisations, an overall site constraint of 0.5 millisievert (a risk of 1 in 40,000) will be applied. Additionally SEPA is required to ensure that reasonable steps are taken such that the contribution to the exposure of the population as a whole from practices is kept ALARA, economic and social factors being taken into account.

The application by EDF does not impact on the existing authorised gaseous and aqueous discharge limits set out in the Authorisations. Therefore, no new prospective dose assessments have been carried out to consider the potential effects of these discharges on humans and non-human biota. The assessments carried out in support of the granting of the Authorisations in 2007, which indicated that the prospective dose was well below the dose constraint of 0.3 milliSievert and of no concern to non-human biota, remain valid.

6 POLICY AND LEGISLATIVE CONSIDERATIONS

SEPA is required to carry out its regulatory duties in accordance with international and domestic legislation and related Government policies. The following section summarises the main relevant policies and legislation that SEPA considers when determining applications for Authorisation under RSA93.

6.1 SEPA's General Purpose

In February 2014 the Regulatory Reform (Scotland) Act 2014 received Royal Assent. Section 51 amends the general purpose of SEPA by inserting section 20A into the Environment Act 1995. Section 20A states:

- (1) *"SEPA is to carry out the functions conferred on it by or under this Act or any other enactment for the purpose of protecting and improving the environment (including managing natural resources in a sustainable way)*
- (2) *In carrying out its functions for that purpose SEPA must, except to the extent that it would be inconsistent with subsection (1) to do so, contribute to -*
 - (a) *improving the health and well being of people in Scotland, and*
 - (b) *achieving sustainable economic growth."*

Scottish Government is currently carrying out a public consultation on the Statutory Guidance it proposes to issue to SEPA on delivery of the above updated general purpose. Further information can be obtained from the Scottish Government website.

6.2 Radioactive Waste Management Policy

As discussed in section 4 the current Authorisations include the disposal of LLW and the applications mostly involves changes to the disposal of radioactive wastes. Therefore, it is important to understand current radioactive waste management policies. Government Policy on the management of radioactive waste in Scotland is set out in a number of policy documents including Review of Radioactive Waste Policy: Final Conclusions (Cm2919), the Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom 26 March 2007 and Scotland's Higher Activity Radioactive Waste Policy 2011.

6.2.1 Low Level Radioactive Waste

Government policy on the management of radioactive waste is currently set out in the white paper "Review of Radioactive Waste Management Policy Cm 2919". This forms guidance to SEPA from UK Government on radioactive waste management issues and as such will be taken into account by SEPA as part of the determination of the applications.

In March 2007 the Government issued a policy statement updating and amending parts of Cm 2919. The key aim of the statement was to provide a high level framework within which individual LLW management decisions could be taken flexibly to ensure safe, environmentally-acceptable and cost-effective management solutions that appropriately reflect the nature of the LLW concerned. The Government also requires the minimisation of waste arisings and the consideration of all practicable options for the management of LLW and has stated that there should be a presumption towards early solutions for waste management. In 2010 a further Government policy¹ was published regarding the

¹ UK strategy for the management of solid low level radioactive waste from the nuclear industry. NDA 2010.

management of solid low level radioactive waste from the nuclear industry. This reinforced the need for flexible solutions that ensure safe, environmentally acceptable and cost-effective management solutions LLW generated by the nuclear industry.

The SEPA Policy on the Regulation of Disposal of Radioactive Low Level Waste from Nuclear Sites, available from SEPA's website, discusses these government policies in detail and how they are applied by SEPA.

6.2.2 Higher Active Radioactive Waste

The Scottish Government published its policy for Higher Active Radioactive Waste (HAW) in January 2011. This is a high level Policy which provides the framework for the long-term management of higher activity radioactive waste arising in Scotland.

The aim of the Policy is to ensure that all activities for the long-term management of the higher activity waste are made in a way that protects the health and interests of people and the integrity of the environment now and in the future.

This aim needs to be considered at the time long-term management decisions are made and when treatment or storage or disposal of the waste is undertaken. These decisions will need to recognise the risk of foreclosing alternative long-term management options and the future impact of these long-term management activities on people and the environment.

Although the HAW Policy has a presumption that HAW arising in Scotland will be stored or disposed of in a facility near the site where it arose and near to the surface, it does not preclude HAW leaving the site where it arose for treatment, where that treatment will result in the waste being in a form which will facilitate its future management and where that treatment represents BPM.

6.2.3 Article 37

As a Member State of the European Union, UK activities involving radioactive substances are governed by legislation set down under the Euratom Treaty.

Article 37 of the Euratom Treaty states:

“Each Member State shall provide the European Commission with such general data relating to any plan for the disposal of radioactive waste in whatever form as will make it possible to determine whether the implementation of such a plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State.”

For the Scottish civil nuclear sector, Scottish Government decides when submissions are required to comply with Article 37 requirements. SEPA provides technical advice to Government and co-ordinates submissions on behalf of the Scottish Government.

Since the current application does not involve any increase to the authorised gaseous or aqueous discharge limits, there is no need to submit a modified plan to the European Commission.

Any site receiving radioactive waste from Hunterston B or Torness for disposal or treatment will have to consider the Article 37 requirements as part of its permitting process. Those considerations are beyond the scope of this consultation.

6.2.4 OSPAR

At the 1998 Ministerial meeting of the Oslo and Paris (OSPAR) Commission, contracting parties to the 1992 Convention for the Protection of the Marine Environment of the North East Atlantic agreed an OSPAR strategy for radioactive substances. The objective of the OSPAR strategy is to prevent pollution of the maritime area from ionising radiation through progressive and substantial reductions of discharges, emissions and losses of radioactive substances.

Following public consultation in June 2000, the Government produced the UK strategy for radioactive discharges 2001-2020 in July 2002², which was updated in 2009. The strategy describes how the Government and the devolved administrations will implement the OSPAR strategy with regard to radioactive substances. Statutory guidance on OSPAR was issued to SEPA by the Scottish Government³ in 2008. The guidance is “high level” in nature requiring SEPA to take account of OSPAR and the UK discharge Strategy for radioactive substances when issuing Authorisations.

The application does not propose to change the current authorised discharge limits to the marine environment. Therefore SEPA considers that there is no conflict with the proposed changes and the UK and OSPAR strategies.

Any site receiving radioactive waste from Hunterston B or Torness for disposal or treatment that will affect its marine discharges will also have to consider the OSPAR requirements as part of its permitting process. Those considerations are beyond the scope of this consultation.

6.2.5 Conservation

SEPA is bound by i) the Conservation (Natural Habitats & Conservation) Regulations 1994 (Habitats Regulations) implement Council Directive 92/34/EC; ii) Council Directive 79/409/EEC (the Birds Directive) and iii) the Nature Conservation (Scotland) Act 2004 which provide the principal legislative components of a new, integrated, system for nature conservation within Scotland.

As a public body under Section 1 of the 2004 Act, SEPA is required to further the conservation of biodiversity when exercising its regulatory functions. As part of the consultation process, SEPA will identify any significant biodiversity interests that might be affected, and will take these into account in its decision-making.

SEPA carried out a dose assessment to non-human species for disposals to air and water from Hunterston B and Torness when the current Authorisations were issued in 2007. These assessments indicated that the dose rates to non-human species as a result of exposure to the gaseous and aqueous discharges were all predicted to be less than the screening dose rate of $10\mu\text{Gyh}^{-1}$. The applications do not propose to change the authorised gaseous and aqueous discharge limits; therefore there is no increased risk to non-human biota.

Any site receiving radioactive waste from Hunterston B or Torness for disposal or treatment will also have to consider the above conservation requirements as part of its permitting process. Those considerations are beyond the scope of this consultation.

² UK Strategy for radioactive discharges 2001-2020, Department for Environment, Food and Rural Affairs, DEFRA Publications.

³ Environment Act 1995. The UK Strategy for radioactive discharges, Statutory Guidance, February 2008. The Scottish Government.

6.2.6 Human Rights

The Scotland Act 1998 and the Human Rights Act 98 (HRA98) incorporate the provisions of the European Convention of Human Rights (“the ECHR”) into Scots law. Under the HRA98, SEPA must consider whether its decisions in respect of authorising the disposal of radioactive wastes under RSA93 will result in any potential or actual breach of a Convention right. If SEPA does identify such a breach it must then consider whether it has the discretion to act otherwise, as its primary obligation must be to fulfil its statutory duty. Where SEPA does have discretion and the Convention right at issue is not absolute, it must then consider whether its decision is justified.

6.2.7 Transport

SEPA’s remit in determining applications made under RSA93 does not extend to regulating the transport of radioactive material or waste. Therefore, this matter is not considered further.

7 RADIOACTIVITY AND RADIATION UNITS AND QUANTITIES

Radioactivity may be defined as the process of disintegration or transformation of unstable atoms which leads to the emission of ionising radiations. The unit used to express the quantity of radioactivity present is the becquerel. One becquerel (Bq) is equal to the disintegration or transformation of one atom every second. One becquerel is a small quantity of radioactivity and it is normal to deal in large multiples such as those listed below.

kilobecquerel (kBq).....one thousand (10^3) becquerels
megabecquerel (MBq).....one million (10^6) becquerels
gigabecquerel (GBq)one billion (10^9) becquerels
terabecquerel (TBq)one thousand billion (10^{12}) becquerels

The basic unit of radiation dose is the gray (Gy). This is a unit of absorbed dose and is a measure of the amount of energy deposited in a material, such as tissue, by radiation passing through it. When passing through tissue some radiations deposit their energy in a more biologically harmful way than others. In order to take account of this effect a unit of dose equivalent known as the sievert (Sv) is used. The sievert is related to the gray by a simple weighting factor for each type of radiation. One sievert is a large unit of radiation dose. Radiation doses to members of the public are usually measured in small fractions of a sievert such as those listed below.

millisievert (mSv)one thousandth (10^{-3}) of a sievert
microsieverts (μ Sv).....one millionth (10^{-6}) of a sievert

8 APPENDICES

1. EDF Application for Torness power station, dated November 2013.
2. EDF Application for Hunterston B power station, dated December 2013.
3. Extant Authorisation for Torness (RSA/A/0070116), including notices of variation VN01 and VN02.
4. Extant Authorisation for Hunterston B (RSA/A/0070022), including notices of variation VN01 and VN02.
5. Stage 1 Consultation Response: Scottish Government.
6. Stage 1 Consultation Response: ONR.
7. Stage 1 Consultation Response: FSA.
8. SEPA Standard Nuclear Authorisation Template.