

Guidance for reservoir managers on the management of controlled reservoirs Reservoirs (Scotland) Act 2011



We are the Scottish Environment Protection Agency (SEPA). As Scotland's environmental regulator we protect and improve the environment by helping business and industry to understand their environmental responsibilities, enabling customers to comply with legislation and good practice and to realise the many economic benefits of good environmental practice.

We are a non-departmental public body, accountable through Scottish Ministers to the Scottish Parliament, and are experienced in providing advice and guidance to business, industry and the public on environmental best practice.

Published by:

Scottish Environment Protection Agency Strathallan House Castle Business Park Stirling FK9 4TZ

January 2020 © SEPA

Contents

| 1.Introduction | | | 3 |
|----------------------|---|------|----|
| | 1.1 Introduction | Page | 4 |
| | 1.2 Changes in legislation | Page | 5 |
| 2.Reservoir managers | | | 7 |
| | 2.1 Our role – an effective regulator | Page | 8 |
| | 2.2 Reservoir regulatory authority | Page | 9 |
| | 2.3 The role of reservoir managers | Page | 10 |
| | 2.4 Multiple reservoir managers | Page | 12 |
| | 2.5 SEPA and multiple reservoir managers | Page | 14 |
| | 2.6 Supervising engineers | Page | 15 |
| 3.Process diagrams | | | 17 |
| | 3.1 Typical clay core embankment dam | Page | 18 |
| | 3.2 Process for the development of a new reservoir | Page | 19 |
| | 3.3 Process for the alteration of a controlled reservoir | Page | 20 |
| | 3.4 Process for the re-use of an abandoned reservoir | Page | 21 |
| | 3.5 Process for the abandonment and discontinuance of a reservoir | Page | 22 |
| 4.Fu | irther information | Page | 23 |
| | 4.1 Frequently asked questions | Page | 24 |
| | 4.2 Sources of information | Page | 25 |
| | 4.3 Glossary | Page | 27 |

1. Introduction

- 1.1 Introduction
- 1.2 Changes in legislation

1.1 Introduction

Through the phased implementation of the Reservoirs (Scotland) Act 2011 (the 2011 Act), SEPA have become the regulatory authority for reservoir safety in Scotland. Taking over responsibility for reservoir safety contributes to our strategic role in flood risk management, introduced by the Flood Risk Management (Scotland) Act 2009, by enabling a more streamlined and consistent approach to flood risk management.

Ensuring that reservoirs are correctly managed and maintained is essential. They provide Scotland with drinking water, power, resources for business and social amenities. The consequences of poor management and maintenance could be devastating and lead to a serious risk of flooding which impacts our communities, businesses, infrastructure and environment. We can manage this risk more efficiently through effective regulation.

Reservoir safety legislation is relatively new within the UK, with laws coming into effect in 1930. The Reservoirs (Safety Provisions) Act 1930 was passed following two major dam failures in 1925, which led to the deaths of 21 people. This legislation was followed by the Reservoirs Act 1975 (the 1975 Act). The 1975 Act was enforced by Scotland's 32 local authorities, with approximately 660 reservoirs falling within its remit. The new legislation, namely the 2011 Act, is now improving the regulatory landscape and changing our roles and responsibilities.

Prior to the implementation of the 2011 Act, SEPA undertook significant engagement with local authorities, panel engineers and reservoir managers to help inform our planning and development of key processes and systems. As a result of this work, and the completion of the registration process, SEPA now has a comprehensive database which contains details of all the reservoirs to which the 1975 Act applied.

As a modern regulator we proactively engage with the reservoir industry to increase your awareness of responsibilities under the 2011 Act and provide support, where possible, to help reservoir managers comply with the legislation.

We will help to support the reservoir industry through a suite of guidance documents that offer advice and good practice on how to fulfil the requirements of the legislation. This supports reservoir managers by identifying the specific roles and responsibilities brought in by the 2011 Act. All guidance documentation can be found at www.sepa.org.uk/reservoirs. If you require a hard copy to be sent to you please email reservoirs@sepa.org.uk or call 03000 996699 to be put through to the Reservoir Regulatory Unit.

1.2 Changes in legislation

Before the implementation of the 2011 Act, reservoir safety in Scotland was regulated under the 1975 Act by Scotland's 32 local authorities. The new legislation introduces a number of significant changes that reservoir managers and engineers should be aware of. The key changes are:

- The introduction of a single enforcement authority. We will regulate reservoir safety using a consistent approach which will provide the industry with a more transparent, fair and effective regulatory system.
- A reduction in the volumetric threshold for sites to qualify as a 'controlled reservoir' from 25,000 cubic metres to 10,000 cubic metres, the equivalent of four Olympic sized swimming pools.
- The introduction of a risk based approach which requires us to assign a risk designation of either 'high', 'medium' or 'low' to every registered controlled reservoir. The risk designation is based on the probability and consequence of an uncontrolled release of water from the reservoir. This risk designation is required to be reviewed at any time SEPA considers it to have ceased to be appropriate or after the period of six years after it was given. The risk designation drives the level of statutory inspection and monitoring at each site.
- The level of monitoring required by the legislation is no longer uniform across all sites. Reservoir managers of 'high' and 'medium' risk sites are now required to appoint a supervising engineer at all times. Inspecting engineers are still required to undertake inspections at 'high' risk sites before the end of a period of 10 years from the date of the latest inspection or at any time recommended by the supervising engineer. 'Medium' risk sites now only require an inspecting engineer to undertake an inspection when recommended by the supervising engineer. 'Low' risk sites are not required to engage either supervising or inspecting engineers.
- The level of information that is required on the 'controlled reservoir register' which we are
 required to maintain and make publicly available has been expanded to include such things
 as safety reports, inspection reports, supervising engineers written statements and a map
 showing the area of land likely to be flooded in the event of an uncontrolled release of
 water.
- Where a person ceases to be a reservoir manager of a controlled reservoir, that person must notify us. The incoming reservoir manager has 28 days after becoming the reservoir manager to notify us.
- Decreasing the capacity of a controlled reservoir is now considered an 'alteration' and a construction engineer must be appointed 28 days prior to work commencing, and the reservoir manager must notify us.
- Inspecting engineers now have nine months after the completion of the inspection in which to supply the reservoir manager with their inspection report. This report must also be sent to the supervising engineer and SEPA.
- Annual written statements produced by the supervising engineer must be supplied to the reservoir manager and us.
- The introduction of incident reporting.
- The requirement for flood plans to be produced setting out the actions to be taken by the

reservoir manager in the event of an uncontrolled escape of water from the reservoir.

The Reservoirs (Scotland) Act 2011 introduces a proportionate, flexible and targeted regulatory system. The introduction of a risk based approach aims to reduce the regulatory burden of medium and low risk reservoirs. The use of a single enforcement authority is improving consistency in applying this regulation across Scotland.

2. Reservoir managers

- 2.1 Our role an effective regulator
- 2.2 Reservoir regulatory authority
- 2.3 The role of the reservoir manager
- 2.4 Multiple reservoir managers
- 2.5 SEPA and multiple reservoir managers
- 2.6 The role and duties of panel engineers

2.1 Our role - an effective regulator

As Scotland's principal environmental regulator, our duties and legal powers are wide-ranging. We believe that well-designed and effective environmental legislation, when combined with other non-regulatory approaches, contributes to sustainable economic growth.

Legislation provides us with a legal framework in which to operate but effective regulation is about more than applying the letter of the law. Much of our business is dedicated to licensing and enforcement activity, including carrying out inspections, reviews, variations, and revocations of licences. We aim to use the simplest and most efficient methods to apply and enforce the law. We also aim to relate our enforcement actions to the degree of risk involved, giving consideration to alternative approaches to formal regulation. By clearly communicating with our customers about how they can comply with the law and providing guidance on best practice, we can ease the burden of regulation while ensuring the best outcomes for human health, our communities, the environment and the economy.

We support the principles of good regulation. We wish to be a firm, fair and effective regulator, listening to businesses and the public and constantly look to improve the services we provide.

2.2 Reservoir regulatory authority

As the regulatory authority for reservoir safety in Scotland SEPA are responsible for:

- Maintaining a register of controlled reservoirs and making it available to the public.
- Undertaking a risk designation process for all registered, controlled reservoirs and providing each reservoir with a risk designation of either 'high', 'medium' or 'low'.
- Making sure that reservoir managers of 'high' risk reservoirs have their reservoirs regularly inspected by inspecting engineers.
- Making sure that reservoir managers of 'high' and 'medium' risk reservoirs appoint a supervising engineer for each of their reservoirs.
- Making sure that reservoir managers carry out maintenance and repairs in the interests of safety required by inspecting engineers.
- Receiving reports of incidents occurring at controlled reservoirs.
- Ensuring that reservoir managers produce flood plans and take action if they fail to do so.
- Enforcing the 2011 Act by making sure reservoir managers fully comply and take enforcement action against those that don't.
- Commissioning engineering services and necessary repairs and recovering costs from the reservoir manager, in the extreme event that reservoir managers fail to comply.
- Reporting to Scottish Ministers.
- Receiving and holding safety reports, certificates, written statements and reports that are produced by panel engineers.
- Acting in an emergency if the reservoir manager is not available or is unwilling to take action.
- Producing initial and updated guidance associated with the 2011 Act.

2.3 The role of reservoir managers

Reservoir managers are the operators, users or owners of the reservoir and have ultimate responsibility for its safety. This role was previously known in the 1975 Act as the undertaker. Typically, reservoir managers include Scottish Water, power companies, distillers and other users, such as fishing clubs and private landowners. If a reservoir is not being used, responsibility for its safety rests with the owner. Reservoir managers are required under the 2011 Act to appoint a panel engineer to oversee construction, alterations, supervise or inspect their sites. Section 2.6 provides further information on panel engineers and their specific roles.

The reservoir manager is ultimately responsible for ensuring the structural integrity of the structures associated with the reservoir and where required by legislation, needs to ensure panel engineers are employed to complete the necessary monitoring, inspections and design and supervision of new reservoirs or repair works to existing reservoirs. Should there be occurrences of non compliance, the reservoir manager will face enforcement action.

The main areas of responsibility for reservoir managers as detailed in the 2011 Act are:

- Reservoir managers are required to register their reservoir with SEPA.
- If building a new reservoir or increasing/decreasing the size of an existing controlled reservoir, the reservoir manager must appoint a construction engineer.
- Reservoir managers who operate 'high' or 'medium' risk sites must have a supervising engineer appointed at all times.
- Reservoir managers must let us know if they appoint or change supervising engineers within 28 days of the appointment or change.
- 'High' risk reservoirs must be inspected at least once every ten years by an inspecting engineer
 or more frequently if specified in an inspection report, or whenever requested by a supervising
 engineer.
- If an inspecting engineer recommends measures to be taken in the interests of safety, the
 reservoir manager is responsible for making sure these are carried out within the stated
 timescales.
- All certificates must also be sent to us, including those related to construction, inspection and any other qualified engineers' certificates.
- If a reservoir manager does not agree with a panel engineer's recommendations, the reservoir manager may refer the matter to a referee (an independent qualified engineer).
- Reservoir managers must keep a proper record of water levels and repairs to ensure ongoing
 monitoring, and maintenance. Reservoir managers must comply with the directions given by a
 construction or inspecting engineer in respect of this.
- Reservoir managers must comply with the directions of a supervising engineer in respect of visual inspection of the reservoir.
- If the reservoir manager does not appoint an engineer, we can appoint one on their behalf and we have the power to recover all costs incurred.

- If a reservoir manager wishes to abandon or discontinue the use of a reservoir, they must appoint a construction engineer to advise on what work needs to be done and certify that it has been carried out satisfactorily.
- If reservoir managers fail to ensure reservoir safety they could face civil or criminal sanctions
- Where a person ceases to be a reservoir manager, that person must notify us within 28 days and conversely when a person becomes a reservoir manager they must also notify us within 28 days.

2.4 Multiple reservoir managers

In certain situations there may be a number of reservoir managers responsible for a single controlled reservoir. Where this situation arises there is the option for a single reservoir manager to be nominated to act on behalf of the other reservoir managers.

As described in the 2011 Act (s4), any of the reservoir managers (the nominating manager) of a single reservoir can nominate another reservoir manager from the same reservoir (the nominee), to act upon their behalf.

Where a reservoir manager has been nominated to act on behalf of the other reservoir managers the nominating manager(s) must notify us of this. The nominating manager(s) are also required to inform the construction engineer, inspecting engineer or supervising engineer for the reservoir.

When we have been informed of this nomination we will contact the nominated and nominating reservoir managers to ensure they concur with their nomination and are aware of their responsibilities.

We require that any nomination is provided in writing to us with all reservoir managers signing the document.

The nominee will thereafter be the single point of contact and will be responsible for the reservoir as a whole. In particular, he/she will be responsible for;

- Appointing a construction engineer.
- Appointing a supervising engineer for high and medium risk sites.
- Complying with directions in a safety report.
- Complying with the requirements contained in either a preliminary or final certificate.
- · Appointing an inspecting engineer.
- Providing inspecting engineers with a copy of the final certificate or a copy of the last inspection report.
- Complying with any direction contained in an inspection report.
- Undertaking visual inspection of the site as directed in a written report provided by the supervising engineer.
- Maintaining a record of water levels, depth of water in the reservoir, flows over waste weirs, leakages, repairs and settlements of walls or other works.
- Providing an engineer with reasonable facilities for undertaking their tasks.
- Providing us with information and assistance as may be reasonably requested.

It should be noted that although a single reservoir manager may have been nominated to act on behalf of a number of reservoir managers for a single reservoir, each of the reservoir managers is still responsible for ensuring compliance with legislation. All reservoir managers need to be aware of and understand that they could face enforcement action if their nominee has not carried out the required tasks.

It should also be noted that the 2011 Act states that where there are multiple reservoir managers at a single site they must co-operate to ensure compliance with the 2011 Act and that it is an offence not to do so.

2.5 SEPA and multiple reservoir managers

Where there are multiple reservoir managers for a single reservoir we prefer that there is a nominated reservoir manager to act as a single point of contact. It is the responsibility of reservoir managers to decide on the nominated reservoir manager and we would not seek to be involved in these discussions. Once a decision has been made we must be notified.

As noted in section 2.4 of this guidance, the nominated reservoir manager acts on behalf of all the reservoir managers but responsibility for ensuring compliance with legislation still lies with each reservoir manager. It is essential that all parties are aware of this and thereafter ensure that the nominated reservoir manager undertakes the tasks and duties as required by legislation.

Prior to accepting the nomination we will contact the nominated and nominating reservoir managers to ensure all parties are satisfied with the proposal and are aware of their duties.

Once the nomination is accepted by all parties, we will engage with the nominated reservoir manager for all further correspondence.

Where the nominated reservoir manager no longer acts on behalf of all the other reservoir managers, we must be notified of the change in writing as soon as reasonably practicable. We would prefer to also receive details of the new nominated reservoir manager at the same time.

Where a single nominated reservoir manager is not in place, we are required to correspond with each of the reservoir managers and likewise each reservoir manager is required to correspond with us where necessary.

In this situation, reservoir managers would be able to appoint a single inspecting and/or supervising engineer to act on behalf of all the reservoir managers. In this situation, each individual reservoir manager is still responsible for returning the required documentation to us.

In situations where we only have to liaise with a single 'nominated' reservoir manager, the reservoir would only incur a single charge.

Where we are required to communicate with a number of individual reservoir managers for a single site, each reservoir manager would incur a charge. These charges are concurrent with the administrative effort required.

2.6 Panel engineers

Panel engineers are a group of specialist engineers, normally civil engineers, appointed by Scottish Ministers to one of four panels for a specific period. Towards the end of the appointment period the civil engineer has to re-apply for appointment to the panel.

Panel engineers can be appointed to one of four panels:

All reservoirs panel

- Service reservoirs panel
- Supervising engineers panel
- Non-impounding reservoirs panel

It is the responsibility of the panel engineer to copy all construction, inspecting or other qualified engineers' certificates to us.

The list of current panel engineers can be found at: www.gov.scot/Topics/Environment/Water/16922/panengineerlist

2.6.1 Inspecting engineers

An inspecting engineer is appointed to inspect a reservoir, identify and make recommendations on measures to be taken in the interests of safety when appropriate. An inspecting engineer is appointed to inspect a reservoir at least every 10 years, or earlier if recommended in a previous inspection report, or when requested by a supervising engineer, or within 2 years of a final construction certificate being issued for the reservoir.

In their role as a qualified engineer, inspecting engineers can also be employed to supervise and certify the completion of measures recommended in the interests of safety in an inspection report. However any "other qualified engineer" from the all reservoirs, non-impounding reservoirs, or service reservoirs panels can also be appointed to undertake this task dependent on the type of reservoir.

Inspecting engineers can be appointed to one of three panels: 'all reservoirs panel', 'non-impounding reservoirs panel' or 'service reservoirs panel'. There are restrictions placed on the type of reservoirs that can be inspected by engineers appointed to the non-impounding and service reservoir panels.

2.6.2 Supervising engineers

A supervising engineer is appointed to supervise a high-risk reservoir or medium risk reservoir. The supervising engineer must supervise the reservoir in accordance with section 50 of the 2011 Act. This includes giving notice to the reservoir manager of things which might affect the safety of a reservoir, monitoring matters directed in any current inspection or safety report and monitoring the compliance of the reservoir manager

Supervising engineers are appointed to the 'supervising engineers panel' although members of all other panels can act as supervising engineers.

2.6.3 Construction engineers

A construction engineer is appointed to design and supervise the construction of a new reservoir or modification of an existing reservoir, such as works to change its capacity or works which might

affect its safety.

A construction engineer can be appointed to the 'all reservoirs panel', the 'non-impounding reservoirs panel', or the 'supervising engineer's panel'. There are restrictions placed on the type of reservoirs on which engineers appointed to the non-impounding and service reservoirs panels can act as construction engineers.

3. Process diagrams

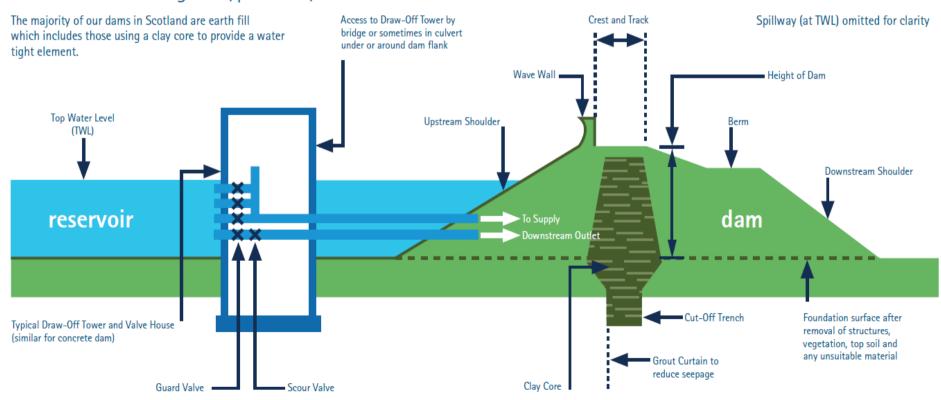
- 3.1 Typical clay core embankment dam
- 3.2 Process for the development of a new reservoir
- 3.3 Process for the alteration of a controlled reservoir
- 3.4 Process for the re-use of an abandoned or discontinued reservoir
- 3.5 Process for the abandonment and discontinuance of a reservoir

3.1 Typical clay core embankment dam

Reservoirs uncovered

We go behind the scenes to unravel the mystery of some key reservoir terminology and show the timeline of a reservoir.

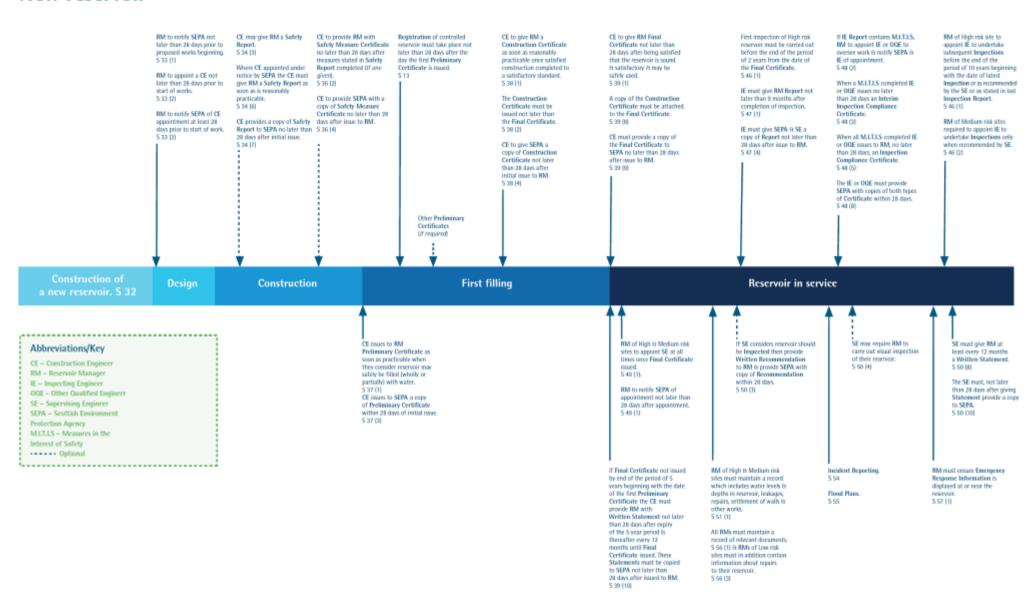
Cross section through a typical clay core embankment dam



Note: Draw-off and scour pipework may be set in the dam, in a culvert through the dam or through the dam flank.

3.2 Process for the development of a new reservoir

New reservoir



3.3 Process for the alteration of a controlled reservoir

Alteration of a Controlled reservoir (excluding abandonment & discontinuance)

Abbreviations/Key

CE – Construction Engineer
RM – Reservoir Manager
IE – Inspecting Engineer
OOE – Other Qualified Engineer
SE – Supervising Engineer
SEPA – Scottish Environment
Protection Agency
M.I.T.I.S – Measures in the
Interest of Safety
------Outional

~-----

CE may give RM a Safety Report. S 34 (3)

Where CE appointed under notice by SEPA the CE must give RM a Safety Report as soon as is reasonably practicable. S 34 (6)

CE provides a copy of Safety Report to SEPA no later than 28 days after initial issue. S 34 (7) CE to provide RM with Safety Measure Certificate no later than 28 days after measures stated in Safety Report completed (if one

CE to provide SEPA with a copy of Safety Measure Certificate no later than 28 days after issue to RM. 5 36 (4)

5 36 (2)

CE issues to RM Preliminary
Certificate as soon as
practicable when they
consider reservoir may safely
be filled (wholly or partially)

CE issues to SEPA a copy of Preliminary Certificate within 28 days of initial issue. 5 37 (3)

with water

5 37 (1)

CE to give RM a Construction Certificate once satisfied alterations completed to a satisfactory

standard.

5 38 (1)

CE to give SEPA a copy of The Construction Certificate must be issued not later than the Final Certificate. CE to give RM Final Certificate not later than 28 days after being satisfied that the reservoir is sound & may be safely used. S 39 (1)

A copy of the Construction Certificate must be attached to the Final Certificate. S 39 (8)

CE must provide Final Certificate to SEPA no later than 28 days after issue to RM. S 39 (9) the date of the first Preliminary Certificate the CE must provide RM with Written Statement & thereafter every 12 months until Final Certificate issued. These Statements must be copied to SEPA. S 39 (10)

If Final Certificate not

issued by end of the period

of 5 years beginning with

Alteration of a controlled reservoir (excluding abandonment & discontinuance)

Alteration of a controlled reservoir includes, any work for the purpose of increasing or decreasing the capacity of a controlled reservoir, or any work in relation to the reservoir, which Scottish Ministers by regulations specify S 32 (4)

RM to notify SEPA not later than 28 days prior to proposed works beginning. S33 (1)

RM to appoint a CE not later than 28 days prior to start of works. S33 (2)

RM to notify SEPA of CE appointment at least 28 days prior to start of work.

Alteration of a controlled reservoir (excluding abandonment & discontinuance)

3.4 Process for the re-use of an abandoned or discontinued reservoir

Re-use of an abandoned or discontinued reservoir

Abbreviations/Key CE - Construction Engineer CE to give RM a CE to give RM Final Other Preliminary If Final Certificate not CE issues to RM Preliminary CE to provide RM with RM - Reservoir Manager CE must give RM a Safety Report. Construction Certificate as Certificate not later than 28 Safety Measure Certificate Certificate as soon as Certificates (if required). issued by end of the period SEPA - Scottish Environment soon as reasonably days after being satisfied of 5 years beginning with the date of the first no later than 28 days after practicable when they Protection Agency measures, as stated in Safety consider reservoir may safely construction completed to a satisfactory & may be safely Preliminary Certificate the · - - - · Optional Report completed. be filled (wholly or partial) This Report must be provided satisfactory standard. used. S 39 (1) CE must not later than 28 5 36 (2) with water. not later than 9 months after days after expiry of 5 year 5 37 (1) appointment of CE. CE to provide SEPA with a period provide RM with The Construction A copy of the Construction copy of Safety Measure CE issues to SEPA a copy of Written Statement of the Certificate must be issued Certificate must be attached Where CE appointed under Certificate no later than 28 Preliminary Certificate reasons & thereafter every not later than the Final to the Final Certificate. 12 months until Final days after issue to RM. notice by SEPA the CE must within 28 days of initial Certificate 5.39 (8) Certificate issued. These give RM a Safety Report as 5 36 (4) ·-----5 38 (2) Statements must be copied soon as is reasonably CE must provide a copy of to SEPA not later than 28 practicable. CE to give SEPA a copy of the Final Certificate to days after being issued to 534 (6) Construction Certificate SEPA no later than 28 days not later than 28 days after after issue to RM. 5 39 (10) CE provides a copy of Safety initial issue to RM. 5 39 (9) Report to SEPA no later than 5 38 (4) 28 days after initial issue. 5 34 (7) RM to notify SEPA not later than 28 days prior to proposed works beginning. S33 (1) Restoring an existing structure to RM to appoint a CE not later than 28 days prior to start of works. S33 (2) Abandoned/ hold 10,000 or more Re-use of abandoned/discontinued reservoir discontinued is treated as RM to notify SEPA of CE appointment at least 28 days prior to start of work. S33 (2) construction 5 32 (3)

3.5 Process for the abandonment and discontinuance of a reservoir

Abandonment & Discontinuance of a reservoir

CE to give RM a Safety Where CE appointed under notice by SEPA the CE must CE to give RM u CE to provide SM with: CE issues to BM as soon as CE to give RM Final: If Final Certificate not Safety Measure Certificate Construction Certificate as Certificate not later than 28 Report reasonably attacticable issued by end of the period give RM a Sofety Report as no later than 25 days after Preliminary Certificate soon as reasonably days after being satisfied of 5 years beginning with Abbreviations/Key por as a manufably measures, as stated in Safety when they consider that the practicable, but not later abandonment salely the date of the first This Report must be provided Preliminary Certificate the proclimble. level of water in the energy's than the date of page of the Report completed. completed. CE - Construction Engineer rad later than 5 months after should be reduced. Final Certificate, over CE must provide RM with RM - Reservoir Manager appointment of CE. Sandah satisfied alterations. Writtes Statement ii CE to provide SEPA with a A copy of the Construction SEPA - Scottish Environment completed to a satisfactory. then all or many 17 words copy of Safety Measure CE mean to SEPA a copy of Certificate must be attached until Final Certificate Protection Agency CE provides a copy of Safety Certificate so later than 29. Pretireinary Certificate 5 00 (00 0 (2) to the Final Certificate. issaed. These Statements · · · · · Optional Report to SEFA to later than days of the man to RM. within 20 days of initial 5.39 (0) must be explice to SERA. L-----26 days after initial issue. CE to give SEPA a copy of 390.54 5 20 (100) 5 07 10 Construction Certificate not later than 28 days after CE must provide a copy of Final Certificate to SEPA no milial sace to RM. later than 28 days after issue 5.38 (4) no 99.8 5 39 100 Other Preliminary Certificates (If regained). RM to notify SEPA not Alteration of a controlled reservoir amounts later than 28 days prior to proposed works beginning. \$33 [1] to abandonment of a controlled reservoir where the alteration is for the purpose of RM to appoint a CE not later than 28 days prior to start of works, 533 (2) Reservoir in Abandonment of a reservoir making the reservoir incapable of filling with water above the natural level of any part RM to notify SEPA of CE appointment at least 28 days prior to start of work. \$33 (2) of the surrounding land 5 32 (6) CL to give BM a Safety Where CE appointed under CE to provide RM with CE issues to RM as scorus CE to give RM a CE to give RM Final If Final Certificate not notice by SEPA, the CE must give RM a Safety Report as teasonably practicable Preliminary Certificate Construction Certificate as soon as reasonably Certificate not later than 26 days after being satisfied Report. Safety Measure Certificate wast by end of the period 5 34 (4) no later than 28 days after of 5 was beginning with soon as is masonably measures, as stated in Safety when they consider that the practicable, but not later the date of the first This Report must be provided practicable. than the date of cause of the Final Certificate, once Report completed. level of water in the reservoir energie test Preliminary Certificate the 5 34 (8) 5 30 (6) \$ 30 (2) should be reduced. CE must provide RM with appointment of CE. S 34 (s) 537 (1) satisfied alterations Written Statement () CE to provide SERA with a completed to a satisfaction A copy of the Construction thereafter every 12 months CE source to SEPA a ropy of copy of Safety Measure until Final Certificate Certificate must be ablached CL provides a copy of Safety Certificate no later than Prohosory Certificate 5 30 (1) (1(2) to the Final Certificate. issued, These Statements-Report to SEPA no later than 20 days after page to RM within 20 days of mital 5 15 (0) must be ropied to SEPA. 20 days after initial issue. CE to give SERA a copy of 5 11 (4) 5 80 (10) Construction Certificate CE must provide a copy of not later than 20 days after Final Certificate to SEFA no initial rouge to SIM. later than 26 days after your 5 38 140 5 30 00 Other Prefiminary Certificates Wrequired. Alteration of a controlled reservoir amounts RM to notify SEPA not later than 28 days prior to discontinuance of a controlled reservoir to proposed works where the alteration is for the purpose of beginning. S33 [1] making the reservoir incapable of holding Reservoir in RM to appoint a CE not later than 28 days prior to 10,000 cubic metres of water above the natural Discontinuance of a reservoir level of any part of the surrounding land (but start of works, 533 (2) still capable of holding water above the RM to notify SEPA of CE natural level of any part of that land) appointment at least 28 5 32 (5) days prior to start of work. S33 (2)

4. Further information

- 4.1 Frequently asked questions
- 4.2 Sources of information
- 4.3 Glossary

4.1 Frequently asked questions

Here are some frequently asked questions relating to the new regulations for reservoirs in Scotland. After reading this section, if you have some unanswered queries please look at the sources of information section (p26). A glossary is also included (p27) to help you understand some of the new terms and concepts associated with the 2011 Act.

Q. Does the 2011 Act apply to all reservoirs?

A. When fully implemented, only those reservoirs capable of holding at least 10,000 cubic metres of water above the lowest natural ground level will apply.

Q. How many reservoirs are regulated by 2011 Act?

A. There are currently around 690 reservoirs regulated in Scotland under the Reservoirs (Scotland) Act 2011. In addition to these sites it has been estimated that a further 800 to 850 reservoirs could fall under the 2011 Act when the registration for reservoirs that hold, or are capable of holding, 25,000 cubic metres of water above natural ground level is reduced to 10,000 cubic metres of water above natural ground level.

Q. Who is responsible for enforcing reservoir safety?

A. SEPA is the regulatory authority for reservoirs in Scotland. We took over responsibility for the enforcement of reservoir safety from local authorities in April 2016.

Q. What is the role of SEPA as the regulatory authority?

A. SEPA, as the regulatory authority, is responsible for comprehensive regulation and enforcement of the 2011 Act. We are also required to maintain a Statutory Public Register of Reservoirs and to produce biennial reports to the Scottish Government.

For further information, please visit www.sepa.org.uk/reservoirs

Q. Who is the reservoir manager?

A. The operator(s), user(s) and/or owner(s) of the reservoir. This can be more than one person or company.

Q. Who has ultimate responsibility for the safety of reservoirs?

A. Under the 2011 Act, reservoir managers (operators, users and owners) have ultimate responsibility for the safety of their reservoirs. They must operate within the law, and must consider the need for planning permission or environmental consents when introducing measures to be taken in the interests of safety.

Q. Who are panel engineers?

A. Panel engineers are a group of specialist civil engineers ("qualified civil engineers") who are experienced and qualified in reservoir safety. They are appointed by Scottish Ministers to one of the panels for a specific period, typically five years. Towards the end of this period, the civil engineer has to re-apply for appointment to the panel.

The 2011 Act requires them to oversee the safe construction, operation and maintenance of reservoirs and inspect their safety every ten years, or more frequently if necessary. A panel engineer must be appointed by the reservoir manager when a new reservoir is built or repairs and changes are made to existing ones where these might affect the safety of the reservoir. Panel engineers (qualified civil engineers) may be construction engineers, inspecting engineers or supervising engineers.

The list of current panel engineers can be found at: www.gov.scot/Topics/Environment/Water/16922/panengineerlist

Q. What is the role of a construction engineer?

A. A construction engineer is appointed by the reservoir manager to supervise the design and construction of a new reservoir, the modification of a reservoir, for example if it changes its capacity or for other work which might affect its safety and for which Scottish Ministers have issued regulations.

Q. What is the role of the inspecting engineer?

A. The inspecting engineer's role is to inspect the reservoir when appointed to do so by the reservoir manager, to advise the reservoir manager of the condition of the reservoir and to make recommendations regarding works required to ensure its continued satisfactory operation, to give directions regarding monitoring required in the period up to the next inspection, and to provide advice on matters to be watched by the supervising engineer.

Q. What is the reservoir manager's role in the inspection process?

A. The reservoir manager should normally attend the inspection and provide the inspecting engineer with the necessary documents to help them carry out the inspection. It is recommended that the reservoir manager check the report to make sure it is accurate before it is finalised and issued. They also have an opportunity to check any queries with the inspecting engineer, such as what measures to be taken in the interests of safety he/she may need to introduce.

Q. What is the role of the supervising engineer?

A. A supervising engineer is appointed by the reservoir manager and is required to notify the reservoir manager about any safety issues related to the reservoir. They are also required to monitor any matters specified in safety reports, preliminary and final certificates as well as inspection reports. They are also required to report to the reservoir manager and SEPA any failures to comply with the previously mentioned reports and certificates. The supervising engineer must produce a written statement at least every 12 months which must be supplied to the reservoir manager and SEPA.

Q. What other organisations are responsible for the enforcement of safety issues that are not covered by the Reservoirs (Scotland) Act 2011?

A. We recognise the role of other organisations and will not take on responsibilities that rightly sit with others or duplicate effort unnecessarily. In particular the Health and Safety Executive has a key role under the Health and Safety at Work etc. Act 1974 and Local Authorities have key roles in addressing site safety under the Building Act 1984 (section 76 to 79). We will provide information to these bodies on risks that we find that are their responsibility.

4.2 Sources of information

4.2.1 SEPA

www.sepa.org.uk

As the enforcement authority for reservoir safety in Scotland the SEPA website hosts comprehensive information on reservoir safety. We also have a national, strategic role for flood risk management and are the flood warning authority for Scotland.

4.2.2 Scottish Government

www.scotland.gov.uk/Topics/Environment/Water

The Scottish Government drafted the Reservoirs (Scotland) Act 2011 in consultation with the reservoir industry. A list of panel engineers is available from the Scottish Government website, along with information on development of the new legislation.

4.2.3 Institution of Civil Engineers

www.ice.org.uk

The Institution of Civil Engineers (ICE) seeks to advance the knowledge, practice and business of civil engineering, to promote the breadth and value of the civil engineer's global contribution to sustainable, economic growth, and ethical standards, and to include in membership all those involved in the profession. The ICE, through its Reservoirs Committee, advises government ministers on the appointment of Panel Engineers.

4.2.4 British Dam Society

www.britishdams.org

The British Dam Society (BDS) is an Associated Society of the Institution of Civil Engineers. It exists to advance the education of the public and the profession in technical subjects relating to the planning, design, construction, maintenance, operation, safety, environmental and social issues of dams and reservoirs. The BDS is also a member of the International Commission on Large Dams (ICOLD).

4.2.5 International Commission on Large Dams

www.icold-cigb.org

International Commission on Large Dams (ICOLD) comprises 82 countries and seeks to develop dams in a technically safe, ecologically and socio-economically sustainable manner.

4.3 Glossary

| Term | Definition |
|------------------------------|---|
| Civil sanctions | An enforcement intervention that can be applied directly by the regulator. |
| Controlled reservoir | After the Reservoirs (Scotland Act) 2011 is fully implemented, a controlled reservoir will be a structure designed or used for collecting water which is capable of holding 10,000 cubic meters of water or more above the natural level of any part of the surrounding land. |
| Dam | A dam is a man made barrier usually built across a river to hold back water forming a loch or reservoir behind it. It can be constructed from concrete or natural materials like earth and rock. |
| First risk designation | The risk designation ('high', 'medium' or 'low') is assigned to a reservoir once the period for representations has ended |
| Impoundment | Any dam, weir, or other works by which water may be impounded (i.e. collected and stored); or any works diverting waters in connection with the construction or alteration of any dam, weir or other works. Raising the level of an existing natural loch is also considered an impoundment. A pond or loch created by excavation below the preexisting ground level (e.g. a dug pond or flooded quarry) is not included. |
| Incident reporting | Reservoir managers are required to report to SEPA incidents that have occurred at their reservoir. |
| Inspecting engineer | Appointed by the reservoir manager of a high risk or medium risk reservoir to carry out an inspection. |
| Inundation map | A map showing areas that would be affected by flooding from releases from a dam's reservoir. The flooding may be from either controlled or uncontrolled releases or as a result of a dam failure. A series of maps for a dam could show the incremental areas flooded by larger flood releases. |
| Nominating reservoir manager | A reservoir manager who has nominated another manager to act on their behalf for decisions relating to the safety of the reservoir. |
| Nominee | Nominated to act on behalf of multiple reservoir managers and may act as a central point of contact in correspondence with SEPA. All individual reservoir managers are still legally responsible for complying with regulation. |
| Panel engineer | A specialist civil engineer appointed by Scottish Ministers. All reservoirs must be designed, constructed, inspected and supervised by a panel engineer. |
| Provisional risk designation | SEPA is required to give a provisional risk designation to all registered controlled reservoirs as soon as practicable once registered. Reservoir managers are able to make a representation to SEPA within two |

| | months, if they are dissatisfied with the risk assigned to their reservoir. |
|----------------------|--|
| Register | The reservoir manager of each controlled reservoir must register the reservoir with SEPA. SEPA must establish and maintain a controlled reservoirs register which contains specific information on each reservoir. SEPA must make the controlled reservoirs register available to the public at all reasonable times. |
| Representation | If a reservoir manager is dissatisfied with the risk designation assigned to their reservoir following SEPA's provisional risk designation, they can make a representation to SEPA explaining why they feel that the risk designation is wrong. |
| Reservoir | Reservoirs are artificial storage places for water, such as ponds, impoundments and raised lochs, from which the water may be withdrawn (abstracted) for purposes such as electricity generation, irrigation, water supply or flood storage. They can also be recreational or amenity sites from which no water is normally abstracted. |
| Reservoir manager | This is the new term under the Reservoirs (Scotland) Act 2011 for the manager or operator of a reservoir. Reservoir Managers have ultimate responsibility for the safety of their reservoirs and will have control over the operation of the dam. The definition has been updated so as to ensure organisations who merely lease or use the water, such as angling clubs, may not be responsible for supervisory and maintenance requirements. However if under the terms of the lease they are required, for example, to operate valves then they may be classed as reservoir managers. |
| Review | A reservoir manager may seek to have their reservoir's risk designation reviewed if following a representation they are still dissatisfied with the risk designation given to their reservoir. SEPA is also required to undertake a review of a reservoir's risk designation when it considers it to be no longer appropriate or by the end of the period of six years. |
| Risk designation | The Reservoirs (Scotland) Act 2011 requires SEPA to assign a risk designation of either 'high', 'medium', or 'low' to all controlled reservoirs. The risk designation will be based on the potential impacts on a variety of receptors from an uncontrolled release of water. 'High' risk sites will receive a greater level of regulation than either 'medium' or 'low'. |
| Supervising engineer | Appointed by the reservoir manager of high and medium risk reservoirs to monitor matters as required in various engineers certificates and reports. |
| Undertaker | In terms of the Reservoirs Act 1975, the "undertaker" is the person or organisation with responsibility for a reservoir. The "Reservoir Manager" will replace the "undertaker" and be responsible for registering each controlled reservoir under the Reservoirs (Scotland) Act 2011. |