



Department
for Environment
Food & Rural Affairs

Post Implementation Review, Reservoir Safety

The Reservoirs Act 1975 (Exemptions, Appeals and
Inspections) (England) Regulations 2013

Date: 7th September 2023

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<p>Title: The Reservoirs Act 1975 (Exemptions, Appeals, and Inspections) (England) Regulations 2013</p> <p>PIR No: N/A</p> <p>Original IA/RPC No: N/A</p> <p>Lead department or agency: Defra</p> <p>Other departments or agencies: Environment Agency</p> <p>Contact for enquiries: Alys Owen – alys.owen@defra.gov.uk Jan Kiernan – jan.kiernan@defra.gov.uk</p>	Post Implementation Review
	Date: 07/09/2023
	Type of regulation: Domestic
	Type of review: Statutory
	Date measure came into force: 27/07/2013
	Recommendation: Amend
RPC Opinion: N/A	

1. What were the policy objectives of the measure?

Reservoir safety legislation aims to prevent uncontrolled releases of water from reservoirs, which can endanger human life and cause widespread flooding. The Reservoirs Act was introduced in 1975. The Floods and Water Management Act 2010 amended the 1975 Act to include a more risk-based approach. Large, raised reservoirs (LRR) which are designated by the EA as “high-risk reservoirs” must be supervised and inspected by a qualified civil engineer. Reservoir owners must implement safety measures recommended by the engineer. For reservoirs designated as “not high risk”, the regulatory requirements were reduced.

The regulations reviewed in this PIR ([Exemptions, Appeals and Inspections](#)) followed on from the introduction of the risk-based approach. For example, the right to appeal a designation of a large raised reservoir as a high-risk reservoir, is included in these regulations (Regulation 4).

These regulations:

1. Specify things which are not to be treated as a large-raised reservoir (and so are out of scope of reservoir safety legislation)
2. Regulate appeals against designations of large-raised reservoirs as high-risk
3. Regulate appeals against notices given by the Environment Agency (“EA”) to reservoir owners requiring them either to appoint an engineer or to carry out an engineer’s recommendation, and
4. Stipulate the timings of inspections.

They work in tandem with the regulations reviewed in the corresponding PIR ([Capacity, Registration and Prescribed Forms](#)).

2. What evidence has informed the PIR?

Evidence has been provided by the Environment Agency, as the regulator. The data collected included the number and cost of inspections and appeals. The 2021 Reservoir Safety Review by Professor Balmforth and the recommendations it made were also considered.

Views were also invited from the Panel Engineers Committee (PEC) (comprising 7 reservoir panel engineers) and a selection of reservoir owners (undertakers) (see Annex D). These views are not comprehensive or representative of the whole reservoir sector but have provided insight about how the safety regime operates at present. Further views will be sought throughout the ongoing Reservoir Safety Reform Programme and any amendments proposed in this PIR will undergo formal consultation ahead of any regulatory reform.

Annex B provides further detail on the approach taken.

3. To what extent have the policy objectives been achieved?

The policy objective of the 1975 Reservoirs Act (as amended in 2010) is to ensure public safety through imposing statutory obligations on undertakers of large raised reservoirs (LRRs) to have their reservoirs supervised, and periodically inspected by qualified civil engineers to ensure the safety of the structure.

These regulations (*Exemptions, Appeals and Inspections*) work in parallel with [The Reservoirs Act 1975 \(Capacity, Registration, Prescribed Forms\) \(England\) 2013](#) to specify the actions and information required for the ongoing application of the safety regime. This approach ensures that the risk of dam failure which could endanger life is kept low and continually managed.

Findings from the Review of Reservoir Safety, and information collected from relevant parties for these PIRs demonstrate that the regulations:

- continue to be needed
- are broadly doing what was intended
- could be more effective with clarifications to some of the regulations themselves and updated guidance to undertakers and engineers.

The objectives outlined in Question 1 have been achieved and this review has identified some areas for possible improvement.

The areas to be considered for possible regulatory amendment are:

- Amendments to the things specified in regulation 3 which are not to be treated as a large-raised reservoir (and so are out of scope of reservoir safety legislation)
- The timescale for inspections in cases where the final certificate of construction is issued by an Environment Agency appointed engineer rather than one appointed by the undertaker.

This PIR has been undertaken alongside the joint Defra and Environment Agency Reservoir Safety Reform (RSR) Programme which is underway to strengthen and modernise the existing reservoir safety regime. Amendments to regulations which are suggested throughout this review will be integrated into the programme planning work, to be considered alongside the Balmforth Review (2021) recommendations. Any proposed amendments captured within this PIR will undergo formal written consultation ahead of any regulatory reform.

Sign-off for Post Implementation Review: Chief economist/Head of Analysis and Minister

I have read the PIR and I am satisfied that it represents a fair and proportionate assessment of the impact of the measure.

Signed: ***Clare Rowntree – Head of Analysis & Evidence for Floods, Water and Contamination***

Date: 24/05/2023

4. What were the original assumptions?

The Flood and Water Management Act 2010 amended the Reservoirs Act 1975 to introduce a more risk-based approach. For reservoirs designated as “not high-risk”, there was a relaxation of regulation; those designated as “high risk” continued with the same level of regulation and inspection. The [2011 Impact Assessment](#) considered the cost and benefits of applying this risk-based approach.

The regulations considered in this PIR (*Exemptions, Appeals and Inspections*) and those in the corresponding PIR (*Capacity, Registration and Prescribed Forms*) did not undergo independent Impact Assessments, but are referenced in the wider Impact Assessment as they cover the application of the wider policy shift towards a risk-based approach for large, raised reservoirs. For example, the appeals process against a designation is included in these regulations (Regulation 4).

As there is no specific Impact Assessment for the regulations reviewed here, the original assumptions relate to the broader context of the designation process. The key assumption was that 55% of LRR would be designated as ‘not high risk’. The eventual outcome of the process has been that only 12.6% have been designated as ‘not high risk’. The disparity occurred as the original assumptions were based on risk of loss of life alone and did not include the impact of risk to infrastructure. Following public consultation in 2011, the EA agreed to include the impact to affected infrastructure in the designation process. This resulted in an overestimation of the benefits of deregulation in the original impact assessment. In the 2011 Impact Assessment, the benefits of introducing high risk designations were estimated at £4.2 million annually. They have averaged £0.3m p.a. between 2017-2022. Registration costs averaged £0.001 million (£1,178) annually, showing a strong benefit to cost ratio.

5. Were there any unintended consequences?

The EA and PEC have raised queries about some of the structures which are not to be treated as a large-raised reservoir. For example, regulation 3c specifies that canals are not to be treated as large raised reservoirs. This has led to uncertainty over who owns the risk presented by any sudden release of large volumes of water from abandoned canals. By contrast regulation 3 does not exempt flood defences, coastal and tidal defences from regulation although these structures are managed and maintained under other Acts.

Clarification is needed to prevent regulatory uncertainty for the owners of such structures yet maintain public safety. This will be considered within the ongoing Reservoir Safety Reform Programme between Defra and EA. Please see Annex C for further details.

6. Has the evidence identified any opportunities for reducing the burden on business?

Yes. Consideration of the exemptions in Regulation 3, and clarification of structures not to be considered as LRRs could – if the exemptions are widened - reduce regulatory burdens and ensure that the inclusion or exclusion of structures under the Act is proportionate to risk (See Annex C).

The appeals process for designation decisions remains proportionate.

7. How does the UK approach compare with the implementation of similar measures internationally, including how EU member states implemented EU requirements that are comparable or now form part of retained EU law, or how other countries have implemented international agreements?

The PEC noted divergence from the international approach saying that the UK is the only country which does not consider a minimum dam height when regulating reservoirs. Instead, England regulates reservoirs capable of retaining 25,000m³ of water, regardless of dam height. This relates to the definition of a LRR within the Reservoirs Act 1975, as well as to the exclusions from this definition which are set out in Regulation 3 (*Specified things not to be treated as large, raised reservoirs*). The point will be considered when developing the new hazard classification approach within the Reservoir Safety Reform (RSR) Programme.

Section 5 of Balmforth's Review: "*International Practice of Reservoir Safety Management*" compares the UK approach to reservoir safety with key principles of the International Commission of Large Dams (ICOLD) and the World Bank. ICOLD focuses on international reservoir safety management. The World Bank is concerned with reservoir regulation and governance. Both support a risk-based approach to reservoir safety management and concur that responsibility for reservoir safety lies primarily with the owner. The regulator is responsible for public safety. The approach in England follows this model.

Annex A: PIR Recommendation and Overview

1. This PIR recommends retaining these regulations and amending them to improve their effectiveness in some areas. This will enable the overall regulatory success of these regulations in ensuring high levels of reservoir safety to continue, while strengthening them further.
2. The review of these regulations is part of a wider reform programme. Following the incident at Toddbrook Reservoir in 2019, the Balmforth Review made a strong case for modernising reservoir safety regulation towards a more proportionate risk-based approach. This would improve safety practice and strengthen roles and responsibilities for owners, engineers, and the regulator.
3. Following this review we began a joint Defra/EA reform programme to strengthen and modernise reservoir safety regulations in line with a more proportionate, risk-based approach ([Written Ministerial Statement](#))¹. These PIRs have therefore been undertaken within the context of this joint Reservoir Safety Reform Programme.
4. The reform programme is to be delivered steadily over several years and will involve implementing the recommendations through a mix of guidance, secondary legislation and, subject to parliamentary time, new primary legislation to modernise the Reservoirs Act 1975. Not all recommendations will be implemented in one go; it will be a phased approach.
5. The information which has been gathered for these PIRs will be considered as part of the joint programme. Amendments to the regulations which have emerged through these PIRs will be embedded into the Reservoir Safety Reform (RSR) programme, underway between Defra and EA to strengthen and modernise reservoir safety regulations. The individual amendments proposed throughout this review will be considered within the programme and will undergo formal written consultation ahead of regulatory amendment.
6. Details of proposals which have emerged throughout this PIR are detailed in Annex C. Fewer amendments have been suggested to these regulations than to the corresponding PIR ([Capacity, Registration and Prescribed Forms](#)).
7. The areas to be considered for possible regulatory amendments are:

¹ Reservoir Safety – reforming the safety regime and modernising legislation for England. [Written Ministerial Statement](#), 20 July 2022.

- Regulation 3 (Specified things not to be treated as large, raised reservoirs), i.e things which are out of scope of reservoir safety legislation
- The timescale for inspections in cases where the final certificate of construction is issued by an Environment Agency appointed engineer rather than one appointed by the undertaker.

Annex B: Review Approach

1. This is the second review of these regulations. In 2018, a single, joint [PIR](#) was undertaken on both [The Reservoirs Act 1975, Capacity, Registration and Prescribed Forms](#) and [The Reservoirs Act 1975, Exemptions, Appeals and Inspections \(2013\)](#). The review recommended keeping the regulations without amendment.
2. This latest PIR is based on information provided by
 - EA as the regulator, as well as questionnaire responses from
 - the Panel Engineer Committee (PEC) and
 - a sample of reservoir undertakers (i.e. owners) (see Annex D).

The questions posed to the EA, PEC and undertakers sought insight on both the content and process behind complying with these regulations.

3. This PIR has been undertaken alongside a corresponding review on [The Reservoirs Act 1975, Capacity, Registration and Prescribed Forms \(2013\)](#). Due to the overlapping content between the PIRs, questions on both sets of regulations were asked together. Questions differed depending on the recipient (EA, engineer, or undertaker), but broadly followed a similar, open-ended approach. This resulted in the successful collection of detailed and well considered narrative which is explored throughout the reviews. Information gathered in these PIRs will be used to help inform future consultations that will be carried out as part of the Reservoir Safety Reform Programme but will not be relied upon in isolation due to the comparatively small sample size.
4. In responding to the questions, some stakeholders provided comments relating to reservoir safety measures outside of the scope of these PIRs. While not included in this report, we value the additional information received and will endeavour to consider broader suggestions within the wider scope of the RSR Programme.

Annex C: Review of Regulations

1. This Annex considers information received from the EA, PEC, and undertakers on each regulation in turn. Some regulations (e.g. *Regulation 1. Citation, commencement, extent and application*) are not included as they provide context rather than direction. Suggested amendments to the regulations outlined below will be considered within the Reservoir Safety Reform (RSR) Programme. Amendments which are deemed necessary will undergo formal written consultation ahead of any regulatory change.

Regulation 3 - Specified things not to be treated as a LRR

2. The Reservoirs Act 1975 (as amended by the Flood & Water Management Act 2010) indicates that any structure, embankment or wall capable of retaining 25,000m³ of water should be treated as a LRR. Regulation 3 then specifies things excluded from that definition.
3. The EA have raised that the wide scope of the definition creates uncertainty about the structures to be regulated where such structures (e.g. flood defences, coastal and tidal defences) are already managed and maintained under other Acts (i.e. the Coast Protection Act 1949; Land Drainage Act 1991; Water Resources Act 1991; Water Industry Act 1991, and the Flood and Water Management Act 2010.) EA ask for clarification to prevent regulatory uncertainty for the owners of such structures, whilst maintaining public safety.
4. Similar suggestions were received from the PEC and reservoir owners. Canals, mines, and quarry lagoons are excluded under the regulation (3c). However, the PEC noted a lack of clarity as to whether abandoned canals are also excluded.
5. The PEC also suggested considering the exclusion of
 - service reservoirs, noting the complexity of inspecting them
 - activated sludge lanes (used in treatment of sewage and industrial wastewaters) and
 - LRR where the height from top water level to the flood plain is less than a specified value.
6. Reservoir owners suggested considering the exclusion of
 - coastal and marine defences, and
 - off-line washland reservoirs (used from time to time to store flood waters).
7. Changes to the exclusions in regulation 3, the definition of a LRR, and the development of an updated Hazard Classification will be considered within the Reservoir Safety Reform (RSR) Programme.

Regulation 4 - Right to appeal a designation of a large, raised reservoir as a high-risk reservoir

8. There have been 5 occasions of appeal of a high-risk designation (under Regulation 4). These all occurred near the beginning of the appeals process, around 2016/17, and outside of the timeframe for this PIR (2018-2023). There have been no appeals since. Of 2,504 registered reservoirs in operation, the EA have assigned a high-risk designation for 2,493. Despite few appeals, the regulation remains necessary for instances where designations are reviewed (e.g. if new properties are built within the flood inundation area).
9. No amendment is required to this regulation.

Regulation 5 - Right to appeal a requirement in a notice

10. Reservoir undertakers may be given an enforcement notice by the regulator requiring them to appoint an engineer or to carry out an engineer's recommendation. Regulation 5 provides the undertaker with a right of appeal against that notice. Appeals are heard by the First-Tier Tribunal.
11. There have been no occasions of an appeal to a notice. However, data from undertakers indicated that this regulation remains necessary for cases where contradictory advice is received from different all reservoir panel engineers (ARPEs). In these instances, the undertaker would initially look to the regulator for guidance, enacting the appeals process only if the dispute continues.
12. Undertakers have suggested a preference to avoid formal appeals process where possible but would value additional information from the EA as to how disputes are managed, and decisions made.
13. Despite no occasions of an appeal to a requirement in a notice, this regulation should be retained for the reason outlined in paragraph 11 above. No amendment to this regulation is required.

Regulation 6 - Periodical inspection of high-risk reservoirs

14. Regulation 6 sets out the times when high-risk reservoirs must be inspected. Several overdue inspections have been reported by the regulator. Instances occur both where an inspecting engineer has, and has not, been appointed. Further details can be found in the EA's annual report.

Timing of Inspections

15. The PEC support the flexibility afforded in Regulation 6(2) for inspecting engineers to set inspection timeframes (to a 10-year maximum).

16. The EA, however, view there to be an omission in Regulation 6 regarding timing of inspections for reservoirs which have been constructed or enlarged without the appointment of a construction engineer.
17. Regulation 6(1)(a) states that high-risk reservoirs should be inspected within 2 years from date of final certificate of construction under S7(3) Reservoirs Act 1975. This is the normal arrangement.
18. However, if an owner does not comply with the requirement to appoint a construction engineer, an engineer may instead be appointed by the Environment Agency. The final certificate of construction is then issued under provisions in S8 rather than S7(3).
19. Regulation 6 does not set a timescale for inspections after a final certificate of construction if it is issued by an EA-appointed engineer under S8. (Some of these reservoirs will however be caught by Regulation 6e which says an inspection is required within two years of the designation of a reservoir as high-risk.)
20. An amendment to set a timescale for inspections in cases where a final certificate of construction is issued by an Environment Agency appointed engineer (rather than one appointed by the undertaker) will be considered.

Annex D – PIR Questionnaires

1. Please see below the information and questionnaire template shared with a selection of reservoir owners and the PEC. These questions were shared alongside a questionnaire for the corresponding PIR on [The Reservoirs Act 1975, Capacity, Registration and Prescribed Forms \(2013\)](#).

Table 1: PIR Questions for Reservoir Owners

These questions seek to understand the clarity and effectiveness of day-to-day reporting and safety management measures.

This information will feed into the regular “post implementation review” that is required every 5 years for these two sets of regulations. The review enables us to understand the extent to which these regulations are maintaining high levels of safety without causing undue burden for reservoir engineers and undertakers.

Essentially, we want to know; are the measures in the regulations easy to undertake, are they effective and do they remain fit for ensuring high levels of safety? If there are areas which could be improved, please indicate how.

We would be grateful if you could make it clear in your responses which question you are answering at each point (A1, A2, A3, A4, A5, B1, B2 or B3). Please answer in either sentences or bullet points, providing a maximum of 150 words per question.

The Reservoir Act 1975 (Exemptions, Appeals, and Inspections) (England) Regulations 2013

- This regulation broadly relates to; specified things not to be treated as large-raised reservoirs, rights of appeal against designations of large-raised reservoirs as high-risk, rights of appeal against notices given by the Environment Agency either to appoint an engineer or to carry out a recommendation of an engineer, the timings of inspections, and savings and transitional arrangements for inspections.

1. <u>Broad Question</u>	What do you think of the requirements in the regulations for reservoir owners? If you have suggestions for improvements, please indicate them.
2. <u>Interpreting and acting on information</u>	How easy/difficult is it to interpret and act on the information provided to you by a reservoir engineer? If you have suggestions for improvements, please indicate them.
3. <u>Appeals</u>	What do you think of the rights of appeal in these regulations (i.e., appeals about designation as high risk and appeals against notices requiring appointment of an engineer or implementation of an engineer’s recommendation)? If you have suggestions for improvements, please indicate them.

Table 2: PIR Questions for the Panel Engineers Committee (PEC)

These questions seek to understand the clarity and effectiveness of day-to-day reporting and safety management measures.

This information will feed into the regular “post implementation review” that is required every 5 years for these two sets of regulations. The review enables us to understand the extent to which these regulations are maintaining high levels of safety without causing undue burden for reservoir engineers and undertakers.

Essentially, we want to know; are the measures in the regulations easy to undertake, are they effective and do they remain fit for ensuring high levels of safety? If there are areas which could be improved, please indicate how.

We would be grateful if you could make it clear in your responses which question you are answering at each point (A1, A2, A3, A4, B1, B2 or B3). Please answer in either sentences or bullet points, providing a maximum of 150 words per question.

The Reservoir Act 1975 (Exemptions, Appeals, and Inspections) (England) Regulations 2013

- These regulations broadly relate to; specified things not to be treated as large-raised reservoirs, rights of appeal against designations of large-raised reservoirs as high-risk, rights of appeal against notices given by the Environment Agency either to appoint an engineer or to carry out a recommendation of an engineer, the timings of inspections, and savings and transitional arrangements for inspections.

1. <u>Broad Question</u>	What do you think of the requirements these regulations impose on reservoir engineers? If you have suggestions for improvements, please indicate them.
2. <u>Things not to be treated as large, raised reservoirs</u>	What do you think of the list of things specified not to be treated as a large, raised reservoir? If you have suggestions for improvements, please indicate them.
3. <u>Timing of Inspections</u>	What do you think of the requirements on timing of inspections? Are they appropriate/inappropriate for achieving high levels of safety without undue burdens? If you have suggestions for improvements, please indicate them.

Annex E – Additional Information Received

1. As noted above, some information has been provided by stakeholders which sits outside of the regulations considered in these PIRs. We have recorded all additional data and will consider broader suggestions within the RSR programme.