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Assembly

Research and Information Service Bill Paper

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The Reservoirs Bill

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This Bill paper provides an overview of the Reservoirs Bill as introduced to the Assembly on the 20th January 2014. The paper also identifies those areas within the Bill which may be contentious and, where relevant, compares similar legislation within England, Scotland and Wales

Key Points

- The Reservoirs Bill was introduced to the Assembly on the 20th of January 2014.
- DARD/Rivers Agency argues that existing legislation does not provide a means to deal with the issue of reservoir safety in a comprehensive manner within Northern Ireland.
- There are two references to reservoirs within existing legislation, namely Article 33 of the Drainage (Northern Ireland) Order 1973 and Article 297 of the Water and Sewerage Services (Northern Ireland) Order 2006.
- As result of implementing the EU Floods Directive, Rivers Agency completed a preliminary flood risk assessment for Northern Ireland. This exercise identified a potential risk from total dam failure of 156 impounding reservoirs (subsequently amended to 151 having a capacity of greater than 10,000 cubic metres of water above the natural level of any part of the surrounding land) to 66,000 people.
- The purpose of the Reservoirs Bill seeks to introduce regulations for the safety of controlled reservoirs capable of holding 10,000m³ (individual or combined capacity if linked) or more of water above the natural level of any part of the surrounding land.
- The emphasis within the Reservoirs Bill could be characterised as seeking to address the potential public safety risk posed by an uncontrolled release of water from a controlled reservoir within Northern Ireland.
- The provisions in the Bill build upon similar legislative mechanisms within Scotland, England and Wales.
- The Bill will have implications for public , private and 3rd sector owners/managers of controlled reservoirs
- Areas for consideration in relation to the Bill include:
 - the development/implementation of additional regulations/orders.
 - Costs to reservoir owners/managers.
 - Downstream development – impacts on reservoir designation and associated costs/PPS15 implications.
 - The definition of reservoir managers.
 - Risk designation.
 - Supervision requirement and commissioning of supervising engineer etc.
 - Duties in relation to supervision.
 - Offence: failure to comply with notice under section 63(2).
 - Stop notices: enforcement.
 - Grant aid provision.

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Appendix 1 - Comparison of key features of reservoirs legislation across the UK

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1 Introduction

There is currently no legislation comprehensively covering the regulation of reservoir safety within Northern Ireland. There are two references to reservoirs within existing legislation as follows:

- Article 33 of the Drainage (Northern Ireland) Order 1973¹ – which deals with the control of dams. This article can only be used however for ‘...*the purpose of preventing or arresting injury to land*’ and cannot be used ‘...*in relation to any dam or sluice which is vested in or controlled by any other government department, any harbour authority, any district council or the Northern Ireland Electricity Service*’
- Article 297 of the Water and Sewerage Services (Northern Ireland) Order 2006² – enables the making of ‘...*regulations with respect to the construction, inspection, maintenance and repair of reservoirs and dams.*’ but to date this provision has not been utilised.

Given this context, reservoir owners and operators effectively operate at their own discretion in terms of what safety measures, if any, they implement. The legal basis for this current system of self-regulation is effectively common law and the Health and Safety at Work (NI) Order 1978³, where it applies.

As a result of implementing the EU Floods Directive⁴, which requires member states to identify, assess, and manage potential significant flood risks, Rivers Agency completed a preliminary flood risk assessment for Northern Ireland. This exercise identified a potential risk from total dam failure of 156 impounding reservoirs (subsequently amended to 151, having a capacity of greater than 10,000 cubic metres of water above the natural level of any part of the surrounding land) to 66,000 people

The Reservoirs Bill, as introduced, is a direct response to this apparent legislative gap and seeks to introduce regulations for the safety of controlled reservoirs capable of holding 10,000m³ (individual or combined capacity if linked) or more of water above the natural level of any part of the surrounding land. The emphasis within the Reservoirs Bill could be characterised as seeking to address the potential public safety risk posed by an uncontrolled release of water from a controlled reservoir within Northern Ireland.

It should be noted that the focus on controlled reservoirs means that the following structures **will not** fall under the auspices of the Bill:

- canals or embanked waterways;
- reservoirs under 10,000m³ (unless DARD decides otherwise by regulation to treat a particular reservoir as such);

¹ [Drainage \(Northern Ireland\) Order 1973](#)

² [The Water and Sewerage Services \(Northern Ireland\) Order 2006](#)

³ [Health and Safety at Work \(Northern Ireland\) Order 1978](#)

⁴ [DIRECTIVE 2007/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL \(Floods Directive\) 2007](#)

- embanked watercourses;
- road or railway embankments which are not integral to the functioning of or operation of the controlled reservoir;
- a weir which does not serve a functional or operational purpose as regards a controlled reservoir;
- a structure or area of water which protects land from sea;
- a pond within an extractive waste site or other waste facility;
- a sewage sludge lagoon or other waste water treatment lagoon;
- an ash, silt or sludge lagoon used for the purpose of a mine or power generation;
- a lagoon for the storage of chemical materials or their waste products; and
- a slurry tank.

DARD (through the auspices of the Rivers Agency) will act as the reservoir authority under the new legislation and as such would have responsibility for the enforcement of the provisions within it.

At the request of the Agriculture and Rural Development Committee, Rivers Agency has carried out a survey of all 151 reservoirs in Northern Ireland, to assess the impact of the proposed reservoirs legislation on reservoirs that are regarded as community assets.

The results published in April 2013 reveal the following in terms of ownership:

- Public – 60;
- Private – 59;
- Council – 16;
- 3rd Sector – 9;
- Not registered/unknown – 7.

The actual geographical spread of these 151 reservoirs, on a district council basis, is set out in tables 1 and 2 below.

Council Area	Public	Private	Council	3 rd Sector	Not registered/unknown	Total
Antrim	2	1	-	1	-	4
Ards	2	3	1	2	-	8
Armagh	2	2	-	3	-	7
Ballymena	2	3	-	-	-	5
Ballymoney	1	2	-	-	-	3
Banbridge	-	1	1	-	-	2
Belfast	1	-	5	1	3	10
Carrickfergus	7	-	1	-	-	8
Castlereagh	1	1	-	-	-	2
Coleraine	6	4	-	-	-	10

Cookstown	3	3	-	-	-	6
Craigavon	-	1	2	-	-	3
Derry	1	-	-	2	-	3
Down	4	7	-	-	-	11
Dungannon & South Tyrone	2	3	1	-	1	7
Fermanagh	1	-	1	-	-	2
Larne	1	3	-	-	-	4
Limavady	2	1	-	-	-	3
Lisburn	5	2	1	-	2	10
Magherafelt	-	4	-	-	-	4
Moyle	-	1	-	-	-	1
Newry & Mourne	5	3	2	-	1	11
Newtownabbey	-	6	1	-	-	7
North Down	6	4	-	-	-	10
Omagh	3	1	-	-	-	4
Strabane	-	1	-	-	-	1

Table 1: Controlled reservoir ownership – those within 1 district council area

Five of the 151 reservoirs actually fall within more than one existing Council boundary and this information is presented in table 2 below.

Council Areas	Public	Private	Council	3 rd Sector	Not registered/unknown	Total
Ballymena/Moyle	1	-	-	-	-	1
Banbridge/Armagh	-	1(multiple)	-	-	-	1
Banbridge/Lisburn	1	-	-	-	-	1
Newtownabbey/Ballymena	-	1	-	-	-	1
North Down/Ards	1	-	-	-	-	1

Table 2: Controlled reservoir ownership – those within more than 1 district council area

It should be noted that these ownership designations should be considered provisional at this point, as a definitive picture of reservoir ownership will only emerge after the Bill is enacted and the formal registration process commences.

2 Overview of Bill

The following is a brief outline of the Bill which consists of 9 parts, 121 clauses and 4 schedules.

Part 1 - Controlled reservoirs, registration and risk designation (clauses 1-23)

Clauses 1-5 deal with the issues relating to controlled reservoirs including the proposed definition of a controlled reservoir in terms of size (10,000m³ of water above the natural level of any part of the surrounding land), and that individual reservoirs, even if below 10,000m³, are defined as a controlled reservoir if water can or does flow to another

reservoir, and as a consequence their combined capacity would be 10,000m³ or more. The Bill also includes the provision to enable reservoirs smaller than 10,000m³ to be classified as controlled if reservoir failure has the potential to cause significant harm /result in loss of life, and also defines what structures are not a controlled reservoir and consequently not subject to regulation under the Bill.

Clauses 6-8 deal with the issues relating to reservoir managers including establishing that responsibility for managing or operating a reservoir is placed on persons or organisations referred to as 'the reservoir manager'; and creating the possibility for a controlled reservoir being managed by more than one 'reservoir manager'. In such instances, multiple reservoir managers must all apply the requirements of the Bill in relation to the area of the reservoir that they manage or operate and there is also a duty on them to co-operate.

Clauses 9-16 outline the requirements for controlled reservoir registration including the fact that DARD will create and maintain this register and that there will be a duty for controlled reservoir owners/managers to register their reservoirs. This element of the Bill also establishes the timeframes for registration, enables the Department to bring forward regulations introducing a registration fee, and identifies offences relating to the failure to register a controlled reservoir.

The issue of risk designation for controlled reservoirs is dealt with in clauses 17-23 which outline the proposed introduction of low, medium and high risk category designations based upon the potential consequences of an uncontrolled release and the probability of such a release. These clauses also deal with the process of periodic risk designation reassessment and the risk designation review and appeals mechanisms.

Part 2 – Requirements for high risk and medium risk reservoirs (clauses 24-37)

Clauses 24-27 deal with issues relating to the supervision of medium and high risk designated reservoirs by a supervising engineer, including commissioning, supervisory duties, visual inspections and the role for nominated representatives.

Clauses 29-34 relate to controlled reservoir inspections by an inspecting engineer and deal with issues such as the requirement for inspections of all medium and high risk reservoirs before the end of 1 year from designation, and the issue of pre-commencement inspections. Attention is also given to the process of appointing an inspecting engineer and the duties that they would be expected to perform.

Clause 35 sets out the requirement for owners/managers of medium and high risk controlled reservoirs to record data on areas such as water levels, leakage, repairs, settlement of walls or other works and other matters as the Department requires. The clause also enables the Department to bring forward regulations which would detail how this information was to be recorded.

Clauses 35-36 identify those offences relating to failure to implement requirements for supervision, inspection and record keeping for medium and high risk designated reservoirs as well as setting out certain defences to offences.

Clause 37 detail defences to offences set out in clause 36.

Part 3 – Construction or alteration of controlled reservoirs (clauses 38-51)

Clauses 38-39 outline the requirement for owners/managers of all controlled reservoirs to appoint a construction engineer if the reservoir requires construction or alteration works. These clauses also define what works are to be considered as construction or alteration to include new construction, restoration to use, alteration to capacity, discontinuance and abandonment.

Clauses 40-48 deal with the specific issues relating to works supervised by a contracted construction engineer including initial commissioning, the content of and compliance with safety reports and the issuing of preliminary, construction and final certificates relating to reservoir construction or alteration activities. Clause 48 in particular sets the conditions for the termination of supervision by a construction engineer.

Clauses 49-50 define offences and defences in relation to the construction or alteration of a controlled reservoir.

Clause 51 sets out transitional arrangements for the Bill to apply to controlled reservoirs already under construction or alteration when the Bill is commenced.

Part 4 – Controlled reservoirs: other requirements (clauses 52-56)

Clauses 52-56 deal with other requirements for controlled reservoirs such as the maintenance of records and the display of emergency response information. Clauses 52 and 53 also enable the Department to make provision through regulations for the reporting of incidents and the preparation of flood plans respectively, and also include provisions for the Secretary of State to restrict disclosure of information if information in an incident report or flood plan would adversely affect national security. Clause 56 details offences under Part 4 and associated penalties/criminal sanctions.

Part 5 – Dispute referral (clauses 57-62)

Clauses 57-62 establish the processes for arbitration between controlled reservoir owners/managers and construction or inspection engineers. The clauses enable the commissioning of a referee, either through agreement between the reservoir owner/manager and relevant engineer or failing agreement through appointment by the Institution of Civil Engineers. The powers of referees are also established and provision is made to enable the Department to bring forward regulations that would set the time, manner and procedure of referrals and costs of the proceedings and investigations.

Part 6 – Civil Enforcement, emergency powers and further offences (clauses 63-96)

Clauses 63-66 enable the Department to serve enforcement notices requiring reservoir owners/managers to commission a supervising, inspection or construction engineer and also establish that it is an offence not to comply with such a notice. The Department also has the power to commission an engineer in instances where the reservoir owner/manager fails to comply with an enforcement notice.

Clauses 67-68 enable the Department to serve enforcement notices where a reservoir owner/manager has failed to comply with a direction in an inspection report, a pre-commencement safety recommendation or a direction in a safety report, and also establish that it is an offence to fail to comply with such an enforcement notice.

Clause 69 enables the Department to commission an engineer to supervise the taking of safety measures in situations where the reservoir owner/manager fails to comply with such an enforcement notice.

Clause 70 establishes the circumstances in which a reservoir owner/manager has committed an offence as it relates to failure to comply with safety matters established in inspection reports, pre-commencement safety recommendations or directions within a safety report.

Clause 71 enables the Department to take emergency action to protect people or property against an escape of water from a controlled reservoir that may cause harm.

Clauses 72-75 deal with issues pertaining to stop notices including giving the Department powers to make regulations to permit the serving of a stop notice on a reservoir manager. These clauses also provide the basis for establishing the content of, and procedure for, issuing stop notices, the possibility for compensation due to loss suffered as a result of the serving of a stop notice and also make it an offence to fail to comply with a stop notice.

Clauses 76-84 set out the other civil enforcement measures that the Department may bring forward through regulations including the introduction of fixed and variable monetary penalties.

Clauses 85-87 cover a range of miscellaneous issues. Clause 85 requires the Department to consult relevant bodies before invoking powers to provide, by regulations, for stop notices, enforcement undertakings and fixed and variable monetary penalties. Clause 86 establishes that the Department may make provision to reclaim reasonably incurred costs from reservoir owners/managers as a result of stop notices, enforcement undertakings and fixed and variable monetary penalties. Clause 87 enables the Department to publish information relating to enforcement action but establishes that this cannot be done where there has been a successful appeal.

Clauses 88-92 outline provisions relating to powers of entry within the Bill and deal with the process for the issuing of warrants, establishes that it is an offence to impeded the entrance to land of a person authorised by the Department and also sets out the circumstances under which the Department must pay compensation or undertake reinstatement work if there is damage to the land or disturbance of the right to occupy.

Clause 93 requires reservoir owners/managers to provide any relevant engineer with reasonable facilities in connection with the engineer's functions under the Bill which includes requiring reservoir owners/managers to make their records and other information available to an engineer in a form, manner and time specified by the engineer.

Clause 94 requires controlled reservoir owners/managers to provide the Department with such information and assistance reasonably sought in connection with the Department's functions under the Bill.

Clause 95 details offences relating to clauses 93 and 94 including the intentional alteration, suppression or destruction of information/documentation and provision of documents/information which is knowingly false or misleading.

Clause 96 enables the Department to require information or assistance from others for the purposes specified and in exercise of its functions under the Bill.

Part 7 – Panels of reservoir engineers (clauses 97-103)

Clauses 97-103 provide the basis for the appointment of engineers to a panel/panels of engineers by the Department. Related issues dealt with through these clauses include the process for removing an engineer from a panel, the dissolution or alteration of a panel, the establishment of a review system for engineers who have been unsuccessful applicants/removed from a panel/deemed as not suitable to continue in a commission, and placing a duty on the Department to consult with the President of the Institution of Civil Engineers before instigating a range of actions relating to a panel. There is also the prospect of the Department bringing forward regulations to enable the charging of fees in connection with the review process, whilst the Department is also proposing to reimburse the Institution of Civil Engineers for any costs reasonably incurred as a result of the appointment of engineers to panel/s or through consultation by the Department.

Part 8 – Miscellaneous (clauses 104-111)

Clause 104 enables the Department to bring forward regulations to extend the time limit for prosecution of summary only offences provided in the Bill.

Clause 105 provides powers to enable the Department to bring forward regulations to enable the payment of grant to reservoir owners/managers in order to meet the obligations within the Bill.

Clause 106 enables the Department to make provision in regulations for the assessment of reports, written statements, recommendations and certificates prepared

by reservoir engineers – this would be done by a committee made up of members of the Institution of Civil Engineers.

Clause 107 sets out the requirements for reservoir owners/managers to notify the Department, within 28 days, when they have revoked the commissioning of an engineer. The clause also requires commissioned reservoir engineers to inform owners/managers of their resignation and owners/managers then have 28 days to provide this notice to the Department.

Clause 108 enables the Department to make further provision in regulations about the form and content of any notice, written statement, report or certificate under the Bill.

Clause 109 deals with conditions relating to the use of electronic communications to send notices or other documents required under the Bill.

Clause 110 enables the Department, by order, to amend references to the Institution of Civil Engineers within the Bill if the Institution ceases to exist.

Clause 111 stipulates that the Reservoirs Bill does not confer a right to claim damages in respect of a breach of an obligation imposed by the legislation.

Part 9 – General (clauses 112-121)

Clauses 112-114 clarify that the Bill applies to the Crown in Northern but also provide that the Crown will not be criminally liable for any contravention of the Bill's provisions, whilst still allowing the High Court to declare any act of the Crown in contravention of the Bill's provisions unlawful, upon application by the Department. Clause 113 also limits powers of entry to Crown land by requiring consent of an appropriate authority whilst Clause 114 deals with issues relating to the service or giving of notices or other documents to the Crown.

Clause 115 deals with offences by bodies corporate and partnerships establishing liability in relation to offences committed under the Bill.

Clause 116 enables the Department by order to amend, repeal, revoke or modify any statutory provisions made by or under the Bill.

Clauses 117-120 detail matters relating to the adoption of orders and regulations and the role and function of the Assembly in this process, key terms used within the Bill, minor and consequential amendments and repeals, and commencement of the Bill.

3 Public consultation

In 2011 Rivers Agency convened a Reservoir Bill Stakeholder Group with a view to shaping Reservoirs Policy. This stakeholder group included representatives from local councils, Executive Departments and Agencies, the Institution of Civil Engineers, Ulster Angling Federation, Ulster Farmer's Union and Waterways Ireland. The group met a number of times during 2011 and early 2012 and the work that they undertook informed

the actual public consultation on draft reservoir safety proposals which ran from the 12th March to the 1st June 2012.

Over the course of the public consultation Rivers Agency also ran 6 information events in Antrim, Belfast, Cookstown, Craigavon, Hillsborough and Newry to provide stakeholders with an opportunity to both discuss the proposals and pose and obtain answers to questions relating to the legislation.

A total of 32 written consultation responses were received from individuals, 3rd sector organisations, public bodies, businesses and elected representatives, with 13 of the respondents providing comments to some or all of the 19 questions within the consultation document. Issues raised by consultees included the following:

- Concerns around potential costs associated with the legislation;
- The need for grant support to enable Bill obligations to be met;
- A general endorsement of the High, Medium and Low risk designation system (11 respondents);
- A general endorsement of the Panel Engineer System (11 respondents);
- A mixed message in relation the charging of fees and cost recovery.

3 Areas for additional scrutiny

The implementation of the proposed Reservoirs Bill will or may involve the development/implementation of additional regulations/orders in the following areas:

- Ability to treat a structure or area which does not currently meet the controlled reservoir definition within the Bill as a controlled reservoir (regulation - clause 2:3);
- Substitute a different volume of water in relation to a controlled reservoir from the currently proposed 10,000m³ (order – clause 4:1);
- define what constitutes a structure which is not to be treated as a controlled reservoir (regulation – clause 5:1);
- Specify the information and documentation required for reservoir registration (regulation – clause 9:2);
- Set fees related to reservoir registration (regulation – clause 14:1);
- Make further provision in relation to applications and reviews and appeals of controlled reservoir risk designation – to include issues relating to fees and awarding of costs (regulation – clauses 20:7 and 21:9);
- Controlled reservoir risk designation – make further provision about the matters that are to be taken into account under sections 17(3), 18(2), 20(3)(b)(ii) and 21(5) (regulation – clause 22:4)
- the form of record keeping to be maintained and information to be included in relation to water levels etc. (regulation – clause 35:2);

- specified works for reservoir safety in relation to controlled reservoir construction or alteration (regulation – clause 38:4b);
- Reservoir safety report content over and above what is outlined in the Bill (regulation – clause 42:1d);
- Construction certificate content over and above what is outlined in the Bill (regulation – clause 45:3c);
- Controlled reservoir incident reporting procedures (regulation – clause 52);
- The preparation of Flood plans for controlled reservoirs (regulation – clause 53);
- Display of emergency response information (regulation – clause 55:2);
- Commissioning of referee in dispute referrals – issues covered include timing, procedure and costs (regulation – clause 62);
- The serving of stop notices by DARD on reservoir managers of controlled reservoirs – issues covered include content, procedure, compensation and enforcement (regulation – clauses 72 and 73);
- Other civil enforcement measures including enforcement undertakings, fixed and variable monetary penalties (regulation – clauses 76-84);
- Recovery by the Department of certain costs – relating to stop notices, enforcement undertakings and variable monetary penalties (regulation – clause 86:1)
- Provisions around the information to be provided by a civil engineer applying to be a member of a panel of reservoir engineers (regulation – clause 98:2);
- Provisions in relation to reviewing decisions not to appoint, or to remove civil engineers from panels etc – including issues such as determining and charging fees (regulation – clause 101:2);
- Miscellaneous - hearing and determining a complaint charging the commission of a specified offence if the complaint is made before the end of the specified period (regulation – clause 104);
- Miscellaneous – provisions for the payment of grants to reservoir managers of controlled reservoirs to assist compliance with the Act (regulation – clause 105);
- Miscellaneous – provisions for the assessment of the quality of reports, written statements and certificates prepared by engineers (regulation – clause 106);
- Miscellaneous – provisions to determine the form and content of any notice required under the Act as well as provisions determining the form of any written statements, reports or certificates issued by engineers (regulation – clause 108);
- If the Institution of Civil Engineers ceases to exist DARD may amend references to the Institution and its President (order – clause 110);
- Supplementary, incidental, consequential provision etc. (order – clause 116).

In the absence of guidance and subordinate legislation, there are areas of the Bill which require further clarification regarding implementation.

4 Potential issues within the Bill

4.1 General issues

4.1.1 Costs to reservoir managers/owners

A common concern for a number of consultation respondents was the potential costs that reservoir managers and owners may have to bear as a result of this legislation.

The Bill makes it clear that the potential costs that a reservoir manager/owner will have to bear will be commensurate with the flood risk posed. Operating requirements with potential cost implications for owners/managers of controlled reservoirs are set out in table 3 below based upon reservoir flood risk designation. This table does not include capital requirements as these will vary from reservoir to reservoir and will only be determined upon inspection by an engineer.

Risk designation	Operating requirements
Low risk	<ul style="list-style-type: none"> • Registration of the controlled reservoir – which may include a fee if one is introduced through subordinate legislation • Provision of an information board displaying emergency response information • Maintain a record of relevant documents detailing repairs • Periodic risk assessment – proposed every 10 years or more often if circumstances require • Potentially include the preparation of a flood plan if required by subordinate legislation • Potentially include the commissioning of a construction engineer if remedial or alteration works are required by an inspection engineer (may be encapsulated within capital costs however) as set out in clause 38 of the Bill. Clause 38 would also by default provide that more minor remedial works (ie not defined within the Clause) could be managed by a supervising or inspecting engineer.
Medium and High risk	<p>Same requirements as those for low risk reservoirs plus the following:</p> <ul style="list-style-type: none"> • Record keeping – water levels, repairs etc • Commissioning of a supervising engineer – who will visit a high risk reservoir at least twice in every 12 month and at least once in every 12 months for a medium risk reservoir and produce associated supervisory reports • Commissioning of an inspecting engineer to conduct an inspection of the reservoir before the end of period of 1 year from the high/medium risk designation (doesn't apply in situations where the controlled reservoir was, immediately before the designation of it as a medium risk reservoir took effect, designated as a high risk reservoir) – 10 year inspecting period thereafter for high risk reservoirs • Potentially include the commissioning of a construction engineer if remedial or alteration works are required by an inspection engineer (may be encapsulated within capital costs however) as set out in clause 38 of the Bill. Clause 38 would also by default provide that more minor remedial works (ie not defined within the Clause) could be managed by a supervising or inspecting engineer.

Table 3 – Proposed operating requirements for low, medium and high risk designated controlled reservoirs

It should be noted that a number of the elements within table 3 are potential rather than confirmed operating costs that may emerge from this legislation and include:

- a registration fee;
- preparation of a flood plan;
- commissioning of an inspecting engineer in relation to medium/high risk designation reservoirs; and
- commissioning of a construction engineer if remedial works are required in relation to all controlled reservoirs.

The Rivers Agency public consultation document on draft Reservoir Safety Proposals published in March 2012, contained a guide of possible costs for a high impact (risk) reservoir in terms of operating and capital works (see tables 4 and 5 below).

Operating costs	Estimated costs	Comment
Supervision and record keeping by supervising engineer	£1,600-£2,500	Estimated range of costs per annum
Monthly monitoring, checks and record keeping	£2,000	Estimated cost per annum. These duties can be undertaken by the reservoir operator or staff following training by the supervising or inspecting engineer
General maintenance (staff and material to include required signage/information board)	£3,000	Estimated cost per annum. This work may be undertaken by the operator, the operator's staff or can be contracted in.
Inspection by approved inspection engineer	£2,500-£4,000	It is proposed that controlled reservoirs designated as high and medium impact will be required to be inspected at least every 10 years or more frequently if required by the supervising or inspecting engineer.
Preliminary survey and assessments (1 st inspection)	£4,000	It is likely that a survey and preliminary assessments will need to be undertaken for the first inspection by an approved inspecting engineer

Table 4: Estimated costs for reservoir operators⁵

Estimates for remedial costs	Estimated costs	Comment
Minor concrete repairs	£15,000	The reservoir safety regime policy proposals only require reservoir operators of high impact controlled reservoirs to undertake works specified by the inspecting and supervising engineer.
Repair and replacing valves	£75,000-£150,000	
Abandoning a reservoir	£250,000	
Replacement of pressure points and grout holes under spillways	£400,000	
Repairs to spillways	£300,000-£1,000,000	These estimated repair costs provide a rough indication of anticipated costs. The need for these works is dependent on a number of factors including the

⁵ [Reservoir Safety Policy, Consultation of Draft Proposals, Rivers Agency, DARD, March 2012 Table 10, page 48](#)

		condition of the reservoir
Cost of decommissioning a reservoir	£750,000	Abandoning a reservoir requires undertaking measures to secure that the reservoir is incapable of filling with water above the natural level of the surrounding land
Development and re-design costs	£333,000	The figure is provided from an example of where a reservoir had not been maintained but its continued use was desired

Table 5: Estimated (remedial costs) for reservoir operators⁶

The researcher has been unable to find any other comparative or more up to date information within the public domain in Northern Ireland or further afield relating to potential/estimated costs that reservoir managers/owners would have to bear. Within this context, and whilst accepting that the costs provided by Rivers Agency are estimates, it is hard to assess whether these estimates are either conservative or extreme in nature.

With regards to potential operating costs, based upon the provisions within the Bill, the greater number of these costs would only apply to controlled reservoirs designated as medium or high risk. It is also worth noting that the Rivers Agency estimated costs figures (in tables 4 and 5) contain no indication as to the potential cost of registering a controlled reservoir or developing a flood plan.

As an added complication, costs, particularly in relation to capital works will undoubtedly depend greatly upon myriad factors such as the type and size of the reservoir, the form of its construction, its location and associated flood risk that it poses to people or property. For these reasons it may be next to impossible to provide a standard cost as the number of potential variables will mean that each reservoir will be a unique case. If the costing data provided by Rivers Agency is accurate however it would appear that there is the potential for some remedial or decommissioning work to cost up to £1million.

Whilst a full and accurate assessment of costs is not possible at this time, the available data would suggest that the potential costs may well present a financial burden to some reservoir managers and owners. By way of example, and based upon Rivers Agency figures cited previously, owners of medium/high risk controlled reservoirs could potentially be faced with annual operating costs of between £6,600 and £7,500, to which could be added an additional figure of between £3,500 and £4,000 if the services of an inspecting engineer was required. In addition a preliminary survey and assessment report, if one is required following risk designation by DARD/Rivers Agency, could carry a cost of £4,000 although this cost may potentially only apply to a limited number of medium and high risk reservoirs, and will depend on the information already available for these structures. These costings also do not include either a

⁶ [Reservoir Safety Policy, Consultation of Draft Proposals, Rivers Agency, DARD, March 2012 Table 10, page 48](#)

registration fee or preparation of a flood plan, the estimated costs of which are unknown at this time, and do not include any associated capital construction engineer costs.

The situation pertaining owner/managers of low risk reservoir costs is harder to pin down, but even considering the estimated costs of general maintenance in table 2, could potentially be up to £3,000 per annum. Once again this estimate does not include any potential costs for either registration or the preparation of a flood action plan.

Given these caveats, it is impossible to assess the full financial impacts for reservoir managers and owners resulting from this legislation, and indeed the potential costs will only be known when the Bill is enacted and affected reservoirs are inspected, given a risk designation and assessed by an engineer in relation to what remedial works, if any, are required.

4.1.2 Downstream development – impacts on reservoir designation and associated costs/PPS15 implications

A potential impact on the enacted Reservoirs Bill may come from ‘downstream development’ that would fall within the potential flood inundation area of a controlled reservoir.

The Department of the Environment recently published, and publically consulted on Revised Draft Planning Policy Statement (PPS) 15 ‘Planning and Flood Risk’ (closed on the 10th January 2014)⁷. Policy FLD5 within the draft PPS deals with the specific issue of Development in Proximity to Reservoirs and outlines proposed development conditions for both new and replacement buildings within the potential flood.

A significant issue within draft FLD5 is that new development downstream of a controlled reservoir could have cost implications for both the reservoir owner/manager and the developer if structural improvement works are required to bring the reservoir up to a condition which mitigates the flood risk to the proposed development. The guidance accompanying draft FLD 5 makes it clear that any costs incurred here would be the responsibility of the reservoir owner/manager and developer and as such the funding of such requirements would be a private matter. This raises questions as to how such an arrangement would sit within the wider framework of the Reservoirs Bill in terms of assessment of required works and with regards to the ability to access potential grant support.

Draft FLD5 contains a presumption against development within a potential flood inundation area for proposals that include the following types of development:

- essential infrastructure;
- storage of hazardous waste; and

⁷ [PPS 15 Revised \(Draft\) 'Planning and Flood Risk', DOE, October 2013](#)

- bespoke accommodation for vulnerable groups.

and there is also a presumption against development located in areas where the Flood Risk assessment indicates potential for sudden and deep inundation.

Looking at draft PPS15/FLD5, one of the further areas of potential concern could be the potential impact that new or replacement development will have on existing reservoir risk designations. Despite the lack of detailed information pertaining to the assessment of risk designation criteria within clauses 17-23 of the Reservoirs Bill, Rivers Agency stakeholder group information notes (23rd September 2011⁸) would appear to suggest how high, medium and low impact/risk would be assessed as follows:

- High impact/risk – where a reservoir breach could endanger 1 or more lives and/or could result in extensive or lasting impact on the environment, culture, heritage or economy;
- Medium impact/risk – where a reservoir breach would have no risk to life but would have significant but not extensive or lasting impact on the environment, culture, heritage or economy;
- Low impact/risk – where no loss of life could be reasonably foreseen and limited impact on the environment, culture, heritage or economy.

Given this context there may well be scope for the allocated risk designation of a reservoir to change as a result of downstream development. Any such change, particularly if the risk designation moved from low to medium or low to high, could have significant financial implications for the reservoir owner/manager. It also remains unclear as to whether downstream development would trigger an immediate reassessment of the reservoir risk designation (Clause 18:3a of the Bill) or whether this would not be looked at until up to 10 years after the initial designation.

4.2 Clause specific issues

4.2.1 Reservoir Managers (Clause 6)

The original consultation document on draft reservoir safety proposals, published in March 2012, makes reference to the fact that *'Recreational users of controlled reservoirs ie fishing or sailing clubs will not be responsible for reservoir safety unless they are the owner(s) of the controlled reservoir'*.

This apparent protection for recreational users was welcomed by many of the respondents to the consultation process including the Ulster Angling Federation and Consumer Council.

The actual clause within the introduced Bill defines 'reservoir managers' under terms of water undertaker, sewage undertaker, any person who manages or operates the

⁸ [Reservoirs Bill Stakeholders Minutes September 2011, DARD/Rivers Agency](#)

reservoir or any part of it but is not the owner, and owners of any part of a reservoir. This would suggest that recreational users of a reservoir will find themselves identified as 'reservoir managers' if they are 'managing' or 'operating' all or part of the reservoir, whether they own it or not. In order to clarify the situation it would be useful to further define what is meant by 'managing' and 'operating' a reservoir – does this primarily refer to the controlling of the water level within the reservoir? What other activities, if any, would fall within the remit of 'managing' or 'operating' a reservoir?

4.2.2 Risk designation (clauses 17-23)

The risk designation process proposed within clauses 17-23 of the Reservoirs Bill will see the creation of 3 risk categories i.e. low, medium and high. As discussed elsewhere within this paper the designation allocated to a controlled reservoir will potentially have significant financial implications for reservoir owners/managers. This potential makes it all the more critical that the process by which designations are allocated is clear.

A key issue pertaining to risk designation within the Bill, and the resulting requirements on reservoirs owners/manager, is that it is currently difficult to determine what, if any differentiation there is between medium and high risk reservoirs in relation to operating requirements. This does raise the question as to whether there is either any need for the medium risk classification or rather more information on the differences between medium and high risk.

Clause 22 within the Bill broadly identifies the factors which will be taken into account in this process in terms of potential adverse consequences from an uncontrolled release of water from a controlled reservoir and how probable such a release is. Clause 22 also further identifies potential adverse consequences under headings such as potential damage to human life or health, the environment, economic activity, cultural heritage and such other potential damage as the department considers relevant. There is however a lack of detail within the Bill as to the weighting applied in relation to each of these factors.

As highlighted previously within this paper, based upon Rivers Agency stakeholder group information notes (23rd September 2011⁹) that informed the development of the Reservoirs Bill, it would appear that existing impact designation utilised in Scotland (high, medium, and low), England and Wales (high risk) suggest that high, medium and low impact/risk could be assessed as follows:

- High impact/risk – where a reservoir breach could endanger 1 or more lives and/or could result in extensive or lasting impact on the environment, culture, heritage or economy;

⁹ [Reservoirs Bill Stakeholders Minutes September 2011, DARD/Rivers Agency](#)

- Medium impact/risk – where a reservoir breach would have no risk to life but would have significant but not extensive or lasting impact on the environment, culture, heritage or economy;
- Low impact/risk – where no loss of life could be reasonably foreseen and limited impact on the environment, culture, heritage or economy.

In the absence of detailed information as to what criteria will be used here, but drawing upon criteria used in the rest of the UK, it would seem likely that threat to human life and health will be the major factor in risk designation. This does raise the question as to how many lives/peoples health will need to be threatened in order for a controlled reservoir to be designated as high risk? If Rivers Agency apply the measure of endangerment to the life or health of one person will this mean that the majority of our controlled reservoirs could be designated as high risk?

Turning to factors that will affect the probability of an uncontrolled release of water from a controlled reservoir, clause 22 within the Bill identifies the following:

- the purpose for which the reservoir is (or is to be) used;
- the materials used to construct the reservoir;
- the way in which the reservoir was or is being constructed;
- the age and condition of the reservoir and how it has been maintained; and
- such other matters as the Department may by regulations specify.

However it fails to provide information as to the specific criteria and weighting that would be applied in relation to these issues. Such guidance will be critical given the potentially diverse nature of controlled reservoirs in Northern Ireland and the financial implications for owners/managers of high/medium risk reservoirs.

4.2.3 Supervision requirement and commissioning of supervising engineer etc (Clause 24)

The Bill proposes that all High and Medium risk controlled reservoirs must at all times be under the supervision of a supervising engineer. In addition reservoir owners of high and medium risk reservoirs may have to contract inspecting and construction engineers as a result of this legislation. Whilst the number of reservoirs that will be designated as high or medium risk will not be known until Rivers Agency complete an assessment, following enactment of the Bill, it is conceivable that there may be a significant requirement for supervisory, inspecting and construction engineers. Such circumstances may well present problems in relation to the number of engineers who could fulfil this function for reservoirs within Northern Ireland.

As part of their scrutiny of the Reservoirs (Scotland) Bill brought forward by the Scottish Government in 2010¹⁰, the Scottish Parliament's Rural Affairs and Environment Committee highlighted their concerns at both the steady decline in the number of panel

¹⁰ [Scottish Parliament Rural Affairs and Environment Committee. \(2011b\) Scottish Government](#)

engineers available to carry out regulatory duties as well the increase in their age profile. In their response to these concerns the Scottish Government was of the opinion that the current provision of all panel reservoir engineers was sufficient for the foreseeable future, but they did also give a commitment to work with the ICE and other stakeholders in England and Wales to ensure that there are sufficient engineers to carry out required roles and responsibilities.

Given the potential growth in the requirement for engineers resulting from this legislation it is legitimate to ask if demand will exceed supply. If such a circumstance occurred would this have an impact on the costs of contracting engineers? This issue has particular significance as the Reservoirs Bill appears to have no provisions for the setting of costs for contracting engineers, relying rather on the operation of the market. If there is a risk of market failure due to a shortage of qualified engineers is there a role for DARD/Rivers Agency or the ICE in monitoring or regulating the fees that engineers can charge?

In addition there is a need for clarification on the number of reservoirs that one supervising engineer can safely and effectively supervise, as well as exploring the distance from the reservoir at which supervision can be effectively and safely conducted.

4.2.4 Duties in relation to supervision (Clause 25,2k)

Clause 25 of the Reservoirs Bill outlines those duties that a supervising engineer will be required to undertake in relation to a medium or high risk controlled reservoir. Paragraph 2k outlines the requirements for visiting a reservoir as follows:

- where it is a high-risk reservoir, at least twice in every 12 month period;
- where it is a medium-risk reservoir, at least once in every 12 month period.

The prescriptive nature of this requirement differs from that included within Clause 50(3) of the Reservoirs (Scotland) Act 2011¹¹, which whilst recognising the need for visual inspection does not set a specific requirement for how often reservoirs should be visited by the supervising engineer. Given this difference, and the fact that a visit to a reservoir will result in costs to the reservoir owner/manager what is the rationale for the proposed visit requirements within the Reservoirs Bill?

4.2.5 Incident Reporting (Clause 52)

Clause 52 within the Reservoirs Bill enables the Department to bring forward regulations that would define the requirements for the reporting of incidents at a controlled reservoir. There is a need for further detail around what would actually constitute an incident, as well as defining what would actually constitute an offence in relation to incident reporting.

¹¹ [Reservoirs \(Scotland\) Act 2011](#)

4.2.6 Flood plans (Clause 53)

Clause 53 would enable the Department to bring forward regulations that could require the preparation of flood plans for controlled reservoirs. Whilst recognising that this issue will be dealt with by regulation there is still a need to clarify factors such as will this requirement apply to all controlled reservoirs, including those designated as low risk?, who will be qualified to produce a flood plan?, and what are the likely costs? It would also be useful to know how often a flood plan would need to be updated and any specific conditions that may require such.

4.2.7 Offence: Failure to comply with notice under section 63(2) (Clause 64)

Clause 64 within the Reservoirs Bill establishes that it is an offence to either fail to meet a requirement to commission a supervising, inspecting or construction or provide notice to the Department of the commissioning. A reservoir manager guilty of an offence under these terms is liable:

- on summary conviction¹² to imprisonment for a term not exceeding 6 months, or to a fine not exceeding the statutory maximum, or to both.
- on conviction on indictment¹³ to imprisonment for a term not exceeding 2 years, or to a fine, or to both;

The prospect of an up to 6 month prison term upon summary conviction is different from the provisions within the Reservoirs (Scotland) Act 2011, which provides for a imprisonment term of up to 12 months upon summary conviction (Clause 66).

4.2.8 Stop notices: enforcement (Clause 75)

Clause 75 of the Bill outlines the enforcement action that the Department may take in relation to failure to comply with a stop notice, which may be introduced through regulation (Clause 72). The penalties for the committing of an offence in relation to a stop notice appear to be far more severe than those contained within Clause 76 of the Reservoirs (Scotland) Act 2011, as illustrated in table 6 below.

	Reservoirs Bill - NI	Reservoirs (Scotland) Act 2011
On summary conviction(NI)/ In the JP court (Scotland)	<ul style="list-style-type: none"> • Imprisonment for a term not exceeding 6 months, or to a fine not exceeding £20,000, or to both 	<ul style="list-style-type: none"> • Imprisonment for a term not exceeding 60 days, or to a fine not exceeding level 4 (£2,500), or to both
On conviction on indictment (NI)/In the sheriff court (Scotland)	<ul style="list-style-type: none"> • For a first offence – imprisonment for a term not exceeding 12 months, or to a fine, or to both • For any subsequent offence – imprisonment for a term not exceeding 2 	<ul style="list-style-type: none"> • For a first offence – imprisonment for a term not exceeding 3 months, or to a fine not exceeding the prescribed sum, or to both • For any subsequent offence – imprisonment for

¹² summary conviction – tried in a magistrates court by a District Judge without a jury.

¹³ conviction on indictment – tried in the Crown court by a judge and jury.

	years, or to a fine, or to both	a term not exceeding 6 months, or to a fine not exceeding the prescribed sum, or to both
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Table 6: Enforcement action relating to stop notices within Northern Ireland Bill and Scottish Act

There is a need for further detail here as to why the penalties relating to stop notice offences appear to be more severe within Northern Ireland as compared to Scotland.

4.2.9 Grant aid provisions (Clause 105)

Given the previously discussed potential costs to reservoir owners and managers as a result of the obligations within this legislation, it would seem clear that the provision of grant aid may well be a critical issue, particularly for those owners/managers facing high compliance costs but potentially lacking the means to pay for them such as sporting clubs or charitable organisations.

Whilst Clause 105 provides a mechanism for the Department to bring forward regulations enabling the creation of a grants programme there is a lack of detail as to how such a mechanism, if introduced, would actually operate. From a practical point of view a key question here relates to eligibility for support. Would grants only be accessible by owners/managers of high or medium risk reservoirs facing capital costs, or would owners/managers of low risk reservoirs also be eligible? Would operating costs qualify for grant support? What would be the maximum grant size? What rate would grant aid be paid at?

At a more fundamental level there must also be questions as to how such a grant scheme, if it was introduced, would be resourced by DARD/Rivers Agency or the Executive. A key issue here is that the overall costs arising from this Bill cannot be known until such time as the Bill has been enacted, inspections completed and risk designations allocated to all the controlled reservoirs affected.

This makes the submission of a bid for support to the Executive, particularly if the grant aid is designed to address capital costs, challenging at the very least. In addition, given the ongoing obligations arising from this legislation, the associated operating costs to be borne by owners/managers are also likely to be ongoing, a circumstance which would suggest that if operating costs were eligible for support, there may also be a need for an ongoing grant aid programme.

This ongoing commitment issue could also apply to capital works requirements. To illustrate this point, whilst a reservoir may initially be designated as low risk and requiring no capital remedial works, reassessment within 10 years or less, may conceivably see the reservoir designation being upgraded to medium or high risk and requiring remedial work, or if the owner/manager chooses, decommissioning work. Owners/managers facing such circumstances may well expect to be able to access a capital grants programme, given that other owners/managers may have benefited from a similar mechanism up to 10 years previously.

APPENDIX 1 - COMPARISON OF KEY FEATURES OF RESERVOIRS LEGISLATION ACROSS THE UK – sourced from Rivers Agency data and existing statute

Issue	Northern Ireland	Scotland	England	Wales
Reservoir legislation	Nothing exclusively specific at present. References to reservoirs within Article 33 of the Drainage (Northern Ireland) Order 1973 and Article 297 of the Water and Sewerage Services (Northern Ireland) Order 2006. Proposed Reservoirs Bill – all references hereafter are to the provisions within the proposed Bill	Reservoirs Act 1975 (as amended) Reservoirs (Scotland) Act 2011	Reservoirs Act 1975 as amended for England Flood and Water Management Act 2010 (schedule 4)	Reservoirs Act 1975 as amended for Wales Flood and Water Management Act 2010 (schedule 4)
Reservoir registration threshold	Bill proposes definition for controlled reservoirs of 10,000m ³ or more of water above natural level of any part of the surrounding land	2011 Act sets 10,000m ³ or more of water above the natural level of any part of the surrounding land	25,000m ³	10,000m ³
Can the volume of water that constitutes a reservoir within the legislation be changed?	Yes – Clause 4 – Department may by order, substitute a different volume of water	Yes – Clause 1 (6) The Scottish Ministers may— (a)by order substitute a different volume of water for the volume for the time being specified	2010 Act amendment to the 1975Act as follows: The Minister may by order substitute a different volume of water for the volume specified in subsection (3) or (6). .	2010 Act amendment to the 1975Act as follows: The Minister may by order substitute a different volume of water for the volume specified in subsection (3) or (6). .

<p>Who has responsibility for the management or operation of a controlled reservoir/reservoir?</p>	<p>Proposed reservoir manager designation Designation applies to the owner of all or part of a controlled reservoir Water and sewage undertakers who manage or operate a controlled reservoir are reservoir managers for all of the reservoir or the part which they manage/operate</p>	<p>Reservoir manager Scottish Water is the reservoir manager of a controlled reservoir which is managed or operated by it In instances where the reservoir is not owned by Scottish Water the reservoir manager is (a) any person who manages or operates the reservoir or any part of it (other than the owner of the reservoir or that part of it), (b) the owner of any part of the reservoir for which no person is reservoir manager by virtue of paragraph (a).</p>	<p>Undertaker</p>	<p>Undertaker</p>
<p>Risk designation</p>	<p>Proposed clauses 17-23 System will focus on high, medium and low risk.</p>	<p>High Medium and Low</p>	<p>High risk only – based upon probability of failure and consequence</p>	<p>High risk only – based upon probability of failure and consequence</p>

APPENDIX 2 - ENGINEER TITLES, RESPONSIBILITIES, DUTIES AND ASSOCIATED CONDITIONS/RESTRICTIONS AS SET OUT WITHIN THE BILL

Engineer	Responsibility	Duties	Conditions/Restrictions
Supervising	All Medium and High risk controlled reservoirs	<ul style="list-style-type: none"> • Supervise the reservoir at all times • Give notice to the Reservoir Owner/Manager of anything that the engineer considers might affect safety • Monitors compliance with safety and inspection reports, preliminary and final certificates • Monitors measures for maintenance • Notifies reservoir owner/manager and Reservoir Authority (DARD/Rivers Agency) of any failure of a reservoir owner/manager to comply with a direction in a certificate or report • Supervises a reservoir during draw-downs • Visits a High risk reservoir at least twice every 12 months • Visits a Medium risk reservoir at least once every 12 months • Gives reservoir owner/manager written recommendation of when an inspection is required • Gives reservoir owner/manager written direction to carry out visual inspections • Prepares written statement for reservoir manager at least every 12 months of steps taken by supervising engineer, safety measures taken by reservoir owner/manager, notices given by supervising engineer, recommendations by supervising engineer and directions by supervising engineer • Provides reservoir owner/manager with emergency contact information and that of a nominated representative • Directs the reservoir owner/manager about how and when to update records • Sends a copy of reports, certificates, statements and notices to the Reservoir Authority (DARD/Rivers Agency) <p>Could also manage/supervise remedial capital works on medium or high risk reservoir provided they are not those identified in clause 38 (see construction</p>	<p>Must be commissioned within 6 months of a reservoir being designated as high or medium risk</p> <p>Cannot be the currently contracted construction or inspecting engineer for the particular reservoir, but can have held either of these positions previously.</p> <p>Can be an employee of the reservoir owner/manager but must be a member of a panel of engineers</p>

		engineer duties below), which only a construction engineer can supervise	
Inspecting	All Medium and High risk	<ul style="list-style-type: none"> • Provides initial inspection report, within 6 months of inspection date, to reservoir owner/manager and copy to the supervising engineer • Supervises measures included in the inspection report which are required in the interest of safety • Issues interim inspection certificates on satisfactory completion of measures • Issues inspection compliance certificates on completion of all measures included in an inspection report • Directs the reservoir owner/manager about how and when to update records • Provides advice and recommendations to the Reservoir Authority (DARD/Rivers Agency) in relation to risk designations, emergency measures, enforcement, reviews and appeals • Issues a copy of reports, certificates and notices to the Reservoir Authority (DARD/Rivers Agency) • Must complete an inspection of a high risk reservoir every 10 years <p>Could also manage/supervise remedial capital works on medium or high risk reservoir provided they are not those identified in clause 38 (see construction engineer duties below), which only a construction engineer can supervise</p>	<p>Must be commissioned and have a reservoir inspection completed within 1 year from date of reservoir being designated as high or medium risk</p> <p>Not required in instances where medium and high risk reservoirs are being supervised by a construction engineer</p> <p>Must be a member of a panel of engineers and cannot be an employee of the owner/manager of the particular reservoir. Also cannot have previously been a construction engineer for the particular reservoir.</p>
Construction	Potentially Low, Medium or High risk – dictating factor is works required	<ul style="list-style-type: none"> • Inspects reservoir and prepares design for construction, or alteration, of a reservoir • Supervises the relevant works, and the safety of the reservoir, until a final certificate is issued. Responsible for works as set out in clause 38 ie alteration or construction works such as restoring an existing structure or area, increasing or decreasing the capacity, discontinuation, abandonment and any other work that the Department may define by regulation. The nature of these works means that there may well be a need for a construction engineer at a number of low risk designated reservoirs • Issues a safety report and safety measures certificates on completion of measures • Issues preliminary certificates when satisfied that the reservoir may be 	<p>Must be commissioned at least 28 days prior to commencement of any construction or alteration of a controlled reservoir</p> <p>Must be a member of a panel of engineers and cannot be an employee of the owner/manager of the particular reservoir. Is also disqualified if they have previously been an inspecting engineer for the particular reservoir</p>

		<p>filled, or partially filled, with water</p> <ul style="list-style-type: none"> • Issues a construction certificate when relevant works have been completed to a satisfactory standard • Issues a final certificate when reservoir is sound and satisfactory and may be used for the collection and storage of water • Directs the reservoir owner/manager about how and when to update records • Sends a copy of reports, certificates, designs and notices to the Reservoir Authority (DARD/Rivers Agency) 	
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