

## Regulatory Framework for Water Dams in Quebec

In the province of Quebec, dams are regulated under several legislations which include the Dam Safety Regulation, established under the Dam Safety Act, the Watercourses Act, the Environment Quality Act as well as the Act respecting the conservation and development of wildlife. The Dam Safety Act provides authority to the Ministère du Développement durable et de l'Environnement et de la Lutte contre les changements climatiques (MDDELCC) to oversee the administration of the Act and its Regulation which came into effect on April 11<sup>th</sup>, 2002. The purpose of the Dam Safety Act is to increase the safety of dams to which the Act applies and thereby protect persons and property against the risks associated with the presence of dams by providing minimum requirements to dam owners.

### Dam Categories and Classifications

The Dam Safety Act is applicable to any works which are at least 1 metre in height and are intended to divert or impound the water of a watercourse. There are two categories of dam defined in the Dam Safety Act which are high-capacity and low-capacity dams. Dams that do not fall under the low-capacity and high-capacity dam categories are unofficially known as “small dams”. Based on various parameters of the dam, high-capacity dams are further subdivided into one of the following five classes: A, B, C, D or E. Each of the dam classification is associated to their respective regulatory requirements.

### Main requirements for high-capacity dam owners under the Dam Safety Act and Regulation

Most of the requirements under the Dam Safety Act and Regulation apply to high-capacity dams. The main requirements for high-capacity dam owners pertain to the request for approval of the outline of remedial measures and implementation schedule resulting from periodic dam safety reviews, the request for authorization for the construction, structural alteration or removal of a high-capacity dam, the preparation and update by an engineer of the impounded water management plan for the applicable high-capacity dams, the preparation and update of an emergency action plan for the applicable high-capacity dams, the preparation and update of a logbook, and the regular maintenance and monitoring of a high-capacity dam which includes inspections by an engineer.

The main aspects of the request for approval of the outline of remedial measures and implementation schedule, and of the request for authorization for work on a high-capacity dam are summarized below. For further details on the regulatory requirements, the Dam Safety Act and Regulation can be consulted respectively at the following webpages:

<http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/S-3.1.01>

<http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/S-3.1.01,%20r.%201>

*Request for approval of outline of remedial measures and implementation schedule resulting from the periodic dam safety review*

Under the Dam Safety Act, every high-capacity dam owner must periodically have their dam undergo a dam safety review carried out by an engineer. The dam safety review which must also include the dam failure consequence category study, aims to evaluate the safety of the dam in terms of good practices in the industry and the applicable regulatory safety standards regarding flood and earthquake resistance. It must also identify any situation liable to compromise the safety of the works and indicate the proposed remedial measures. The high-capacity dam owner must submit to

the MDDELCC the dam safety review and also, for approval, the remedial measures he intends to take as well as the implementation schedule resulting from the dam safety review. Other documents required for the approval are indicated in the Dam Safety Act and Regulation.

*Request for authorization for the construction, structural alteration or removal of a high-capacity dam*

The construction, the structural alteration and the removal of a high-capacity dam are subjected to an authorization of the MDDELCC. In the case of a construction or structural alteration of a high-capacity dam, the request for authorization must also include the plans and specifications prepared by an engineer as well as a certificate from the engineer stating these documents conform to the regulatory safety standards. Other documents required for authorization such as stability, hydrologic and hydraulic studies, are indicated in the Dam Safety Act and Regulation. Upon completion of the authorized work, another certificate of an engineer stating that the work has been carried out in conformity with the plans and specifications must be forwarded to the MDDELCC.

**Main requirement for low-capacity dam owners under the Dam Safety Act and Regulation**

The construction, structural alteration and demolition of a low-capacity dam are subjected to declaration to the MDDELCC. The declaration which constitutes the main requirement for low-capacity dam owners must also be accompanied with the plans and specifications prepared by an engineer in the case of a construction or structural alteration of a low-capacity dam project.

**Administration of the Act and Regulation**

The Direction de la sécurité des barrages (DSB) is the department at the MDDELCC who is in charge of the administration of the Dam Safety Act and Regulation which pertains to more than 6000 dams. The DSB ensures that dam owners comply to the requirements under the Dam Safety Act and Regulation by also:

- analyzing the conformity of requests of authorization relative to construction or structural alteration of dams;
- analyzing the requests for approval of the outline of remedial measures and implementation schedule resulting from dam safety reviews;
- carrying out verification visits as part of the annual verification program pertaining as well but not exclusively to the conformity of work;
- carrying out administrative and legal measures provided by the Dam Safety Act;
- maintaining updated and making available a register of dams.

The DSB also maintains a website which contains various information regarding dams including the Dam Safety Act and Regulation, dam register, and guidelines on the evaluation of reliability of discharge facilities and on the interpretation of the dam technical sheet. This website can be found here: <https://www.cehq.gouv.qc.ca/loisreglements/barrages/index.htm>.

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