

**GENERAL ORDER 2017-097**  
Section 49 *Oil and Gas Activities Act*

**Issued to:**

Progress Energy Canada Ltd.  
500, 140 10<sup>th</sup> Avenue SE  
Calgary AB T2G 0R1

**Attention:** Mr. Glen Swanson, Manager, Regulatory and Operational Compliance

**Order:**

Pursuant to section 49(b) of the *Oil and Gas Activities Act* (the Act), I, Jacques Corstanje, order that Progress Energy Canada Ltd. (Progress) must:

1. By September 15, 2017, continuously maintain the water level in the freshwater storage structure located at b-57-J/95-B-09 (the Structure) at or below 50% of the design live storage of the Structure.

**Conditions:**

- A. The Order and this amendment shall remain in effect until amended or terminated by the Commission.

**Reasons:**

- i. Progress is the permit holder of the Structure.
- ii. The Structure is a dam under the *Water Sustainability Act*.
- iii. During a field assessment conducted on May 16, 2017, the Commission's Water Manager, Allan Chapman, MSc, PGeo, Dam Safety Officer, Justin Anderson, Operations Officer, Ken McLean and FLNRO Senior Dam Safety Officer, Monty Miedrich, observed features that created a concern about the integrity and stability of the Structure, namely:
  - a. Large volumes of ditch water were flowing through the ditch system adjacent to the north-west corner of the Structure, and had been transported into the Structure. A ditch block has been placed into the ditch at the north-west corner of the Structure with a small diameter steel pipe installed to direct ditch water from the south side of the road to the north side of the road, and away from the structure. A conversation with a contractor on-site indicated that this emergency work was done on or about May 11 or 12,

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2017. The steel pipe has insufficient capacity to safely transport all ditch water during a storm rainfall event.
- b. The existing closed-culvert spillway on the Structure is insufficient to provide adequate outflow in the event of a large inflow from a storm rainfall event.
  - c. There is field evidence that the water level approached within 0.5 metres of the crest elevation of the Structure during a recent storm event, creating risk of overtopping.
  - d. Retention of rain water on the Structure's crest due to flat profile and vehicle rutting may cause saturation of the crest and breaching failure of the Structure. Erosion was occurring at some locations on the Structure's dam crest and dam face in relation to the rutting.
  - e. The Structure's earthen berm exhibits tension cracks, and possibly exhibits evidence of water seepage through the fill;
- iv. On May 23, 2017 the Commission issued Order 2017-029.
- v. On June 2, 2017, the Commission inspected the site, verifying that water diversion had been ceased, that water volumes in the Structure had been reduced to at least 1.0 metres below the lowest elevation of the top of the Structure, and that a culvert had been installed to ensure ditch water is transported under the road, in compliance with Items 1, 2, 3, and 4.a. of Order 2017-029.
- vi. On July 26, 2017 the Structure was inspected by the Commission's Dam Safety and Integrity Engineer, Kevin Fattah, M. Eng, M. Sc., P.Eng., who observed features that create a concern for the integrity and stability of the Structure, namely the following:
- a. A single outflow culvert is situated higher than required to maintain a safe freeboard for the Structure and is of inadequate size to maintain safe freeboard during peak inflows.
  - b. Flow of water from the forest side has caused several slumps moving towards the Structure's upstream sides. Ongoing slumping may cause a slide failure towards the dam.
  - c. Several locations with erosion from water inflow were observed on the upstream side of the Structure, and some were found to be wet at time of inspection despite dry weather during the days preceding the inspection.
  - d. Retention of rain water on the Structure's crest due to flat profile and vehicle rutting may cause saturation of the crest, generation of cracks, and failure of the Structure.
  - e. High vegetation cover present on the crest and downstream sides of the Structure prevents clear monitoring of the Structure.

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- vii. The Commission's Dam Safety and Integrity Engineer has recommended reducing water level in the Structure to 50% or less of the design live storage to mitigate risks of failure.
- viii. On September 11, 2017, Progress advised the Commission that it had taken steps to further reduce water levels in the Structure.
- ix. On September 13<sup>th</sup>, 2017 the Commission terminated Order 2017-029.
- x. Based on the July 26<sup>th</sup>, 2017 inspection and recommendations by the Commission's Dam Safety and Integrity Engineer, I am of the opinion that maintaining water levels in the Structure higher than 50% of the design live storage creates a potential for Structure failure.
- xi. I am of the opinion that this order is required for protection of the environment and to mitigate risk to public safety.

### **Review and Appeal**

Progress may request a review of this order under section 70 of the Act by submitting a request for review to: [ogc.determinationreviews@bcogc.ca](mailto:ogc.determinationreviews@bcogc.ca).

Progress may appeal this order to the Oil and Gas Appeal Tribunal under section 72 of the Act. The process for appeals may be found at [www.ogat.gov.bc.ca](http://www.ogat.gov.bc.ca) and a notice of appeal may be sent to the Oil and Gas Appeal Tribunal at:

Oil and Gas Appeal Tribunal  
PO Box 4925 Stn Prov Govt  
Victoria, BC V8W 9V1



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Jacques Corstanje, RPF  
Director, Aboriginal Liaison Program  
BC Oil and Gas Commission

DATED AT Fort St. John, in the Province of British Columbia, this 13<sup>th</sup> day of September, 2017.