

GENERAL ORDER 2017-095
Section 49 Oil and Gas Activities Act

Issued to:

Progress Energy Canada Ltd.
500, 140 10th 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 d-24-C/94-G-01 (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 create a concern about the integrity and stability of the Structure, namely:
 - a. Significant and major erosion and slumping of the Structure's fill material on the side proximal to water loading and offloading;

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- b. Saturation of the Structure's earthen berm material on the side proximal to the water loading and offloading, associated with the erosion and slumping noted in "a" above; and
 - c. Seepage of water through the Structure's earthen berm.
- iv. On May 23, 2017 the Commission issued Order 2017-26.
- v. On June 2, 2017, the Commission inspected the site, verifying that use of the Structure had been ceased, that water levels had been maintained in compliance with the Order.
- 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 created a concern for the integrity and stability of the Structure, namely the following:
 - a. The dam has large rotational slumps on the road side of the dam, which is considered the weakest point in the Structure. Longitudinal cracks along the Structure's crest observed at this location may result in future rotational slumps during conditions of high water level and/or high rain intensity.
 - b. The outflow culvert size and location are not consistent for maintaining the required safe freeboard for the Structure.
 - c. Any combination of
 - i. High water level in the structure,
 - ii. Retention of rain water on the Structure's crest due to flat profile and vehicle rutting,
 - iii. Low soil compaction density,
 - iv. Narrow width of one area of the dam, and/or
 - v. Heavy rain conditionsmay cause saturation of the crest and generation of cracks and failure of the Structure.
 - d. High vegetation cover present on the crest and downstream sides of the Structure prevents clear monitoring of the Structure.
 - e. Continuous erosion from flowing water observed at different locations on the Structure's up and downstream sides can result in deterioration of embankment faces, crest damage, and breaches.
- 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 13th, 2017 the Commission terminated Order 2017-026

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- x. Based on the July 26, 2017 inspection and recommendations by the Commission's Dam Safety and Integrity Engineer, I am of the opinion that Item 3 in the Order should be terminated and that additional measures should be taken to reduce water levels in the Structure.
- xi. 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.
- xii. 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.

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 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



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

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