

GENERAL ORDER 2017-094
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(1)(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-21-F/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 created a concern about the integrity and stability of the structure, namely:
 - a. Water was over-topping the Structure;
 - b. Erosion and slumping was occurring at locations on the Structure associated water over-topping; and
 - c. The Structure does not possess a surface spillway or outlet.

General Order 2017-094

- iv. On May 23, 2017 the Commission issued Order 2017-023.
- v. On June 2, 2017, the Commission inspected the site, verifying that water volumes in the structure had been reduced to at least 1.5 metres below the lowest elevation of the top of the Structure, in compliance with Items 1 and 2 of Order 2017-023.
- 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 about the integrity and stability of the Structure, namely the following:
 - a. Longitudinal and lateral cracks were observed at two locations on the crest of the Structure. Cracks at one location coincided with the location where water was observed to be over-topping the structure on May 16, 2017, indicating a risk of failure.
 - b. Slumps were observed on the upstream side of the Structure.
 - c. The outflow culvert size and location are not consistent for maintaining the required safe freeboard for the Structure.
 - d. Saturation of the Structure's crest may be caused by various factors, including:
 - i. Retention of rain water on the Structure's crest due to flat profile and vehicle rutting,
 - ii. High water level in the Structure,
 - iii. Heavy rain,
 - iv. Low density of compacted soil, and/or
 - v. Narrow width in one locationSaturation of the crest would likely have a high impact on the Structure's safety and may cause cracks and Structure failure.
 - e. Erosion from water inflow was observed at locations on the up and downstream sides of the Structure.
 - f. High vegetation cover present on the crest and downstream sides of the Structure prevents clear monitoring of the Structure.
- 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 the water levels in the Structure
- ix. On September 13, 2017 the Commission terminated Order 2017-023.
- x. Based on the July 26th, 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.

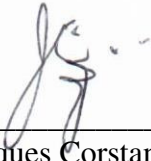
- xi. I am of the opinion that this order is required for protection of the environment and to mitigate risk to public safety.

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.

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
Oil and Gas Commission

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