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April 13, 2018

Al Loan, President CEAEC
164 Ruskin Drive
Beaconsfield, QC
H9W 2Y2

Subject: NEEQ proposal for Unsensitised Emulsions

Mr. Loan,

Thank you for your correspondence of January 5, 2018 proposing a method for licence holders to apply a Net Equivalent Explosives Quantity (NEEQ) to various explosives products. Additional information was subsequently provided to help establish a standardized method for energy calculation purposes.

This letter is to inform you of the acceptance of your proposal for net equivalent explosives quantity (NEEQ) of some unsensitised ammonium nitrate emulsions. The Explosives Regulatory Division will accept a NEEQ of 75% for bulk unsensitised emulsions when:

- The product has passed UN Test Series 8 with negative results; or,
- MBP is ≥ 5.6 MPa.

The application of above-mentioned NEEQ is limited to products that meet the following criteria:

- The product does not contain any perchlorates;
- The product must be unsensitised (i.e. no artificial voids); and,
- The product is shown to have a calculated energy $\leq 75\%$ of TNT.

If a product meets the above criteria, CEAEC Members may use a NEEQ of 75% for quantity distance purposes at a licenced site.

The energy calculation is of interest as it forms the basis of this approval. The CEAEC MTT Committee members made acceptable assumptions as inputs when making an energy calculation with an Ideal Detonation Code model for an emulsion, and used a theoretical TNT value for comparison of 4564 kJ/kg. Future calculations are expected to be done accordingly.

Best regards,

Jean-Luc Arpin
Director, Chief Inspector of Explosives

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