MEMORANDUM

To: **For the Record**

From: **Edward L. Leonard, P.E., Dam Safety Engineer**

Date: **July 22, 2003**

Subject: **Inspection of the Curtis Pond Dam, Calais.**

On July 14, 2003, Edward Leonard and Emeric Rochford made a routine inspection of the Curtis Pond Dam in Calais, Vermont. The last inspection of this dam was May 16, 2001. A number of photographs and observations were taken.

OVERALL CONDITION

The overall condition of the dam is poor and permanent repairs should be made to the structure.

RECOMMENDATIONS FOR OWNER

Recommendations for the owner include:

1) The dam should be observed daily and any changes should be recorded, such as:
   a) increased leakage
   b) different location of leakage
   c) muddy leakage
   d) enlargement of or formation of new sink holes
   e) movement of the dam

Any observed changes should be immediately reported to the Town or the State Dam Safety Office at (802) 241-3454.

2) The Town should make periodic checks of the dam.

3) Determine the owner of the dam.

4) Develop an Emergency Action Plan (EAP) to warn downstream residents in the event of failure of the dam.

5) Plans should be generated for the reconstruction of the dam.

INSPECTION

The inspection of the dam was conducted on July 14, 2003 between 2:15 and 2:45 P.M. The weather was sunny and warm. The ground was firm and dry. The water level was 0.1 feet above the PK nail. The following was observed:

1. Embankment Section.

a) Upstream Slope. The upstream slope of the embankment was firm, dry, and regular. The upstream face of the dam is lined with a rock wall, which prevents erosion and stabilizes the dam. Sandbags have been placed on the left side of the spillway, to prevent water from passing through the wall.

b) Downstream Slope. The downstream slope of the dam was in poor condition. The downstream slope consists of a rock wall. Portions of the rock wall were covered with moss and some brush, which indicates that water is seeping through these areas of the rock wall. A rock was missing from the wall and water was seeping from many areas on both the left and right side of the spillway, all indicating a possible future failure of the dam.

c) Crest. A sinkhole was located on the left side of the spillway. The sinkhole had been partially filled and sandbags placed upstream from it to prevent further erosion. A piece of plywood had been placed over the hole. A new depression was observed to the right of the spillway on the upstream side along with several other minor depressions.

d) Toe. The toe of the dam was moist with some weeds and plants growing from it on both sides of the discharge channel.

2. Principle Spillway.

a) Weir and inlet. The weir and inlet of the principle spillway was in good condition. There was a small amount of debris, which should be removed. The crest of the principle spillway was uneven.

b) Outlet Channel. The outlet channel was in good condition.

3. Sluice.

a) Structure. The sluice was in poor condition. Discharge was seeping into and around the sluice. The flow out of the sluice appears to have increased from the previous inspection. Moss and brush was found growing in and around the sluice, an indication of continuous water flow.

HYDROLOGY AND HYDRAULICS

The drainage area at this site is about 917 acres. The pond area at the normal pool is about 76 acres with storage of about 724 acre-feet. At the dam crest, the pool stores 1,000 acre-feet.

DOWNSTREAM CLASSIFICATION

The dam is a Class 2, "significant hazard" dam.

JURISDICTION

Since the dam impounds more that 500,000 cubic feet, any alteration, reconstruction or breaching would require prior approval from the Department under provisions of 10 VSA Chapter 43. Further drawdown of the pond would require approval form the Department under a 1272 Order.