Memorandum

To: Chief Engineer

From: I. A. Winter

Subject: Granby Pumping Plant—Colorado—Big Thompson Project—Tracy Pumping Plant—Central Valley Project.

1. Reference is made to Mr. Glover's memorandums dated May 5, 1948, subjects as above.

2. It is recommended that the tests outlined in Mr. Glover's memorandums be conducted at both Granby and Tracy Pumping Plants. It is believed the cost of performing this work will be nominal and the data obtained will be necessary to indicate the adequacy of the designs of the present discharge pipes and will serve as a basis for final adjustment of the various control features. This work could be coordinated, with the acceptance tests, to take advantage of the presence of manufacturer's representative and other technical personnel who would be available at the plants during official acceptance tests.

3. It is our usual practice to include in the hydraulic equipment specifications, pertinent operating instructions to serve as a guide for the plant operators in avoiding excessive pressure rise in the discharge pipes and other essential operating features. These instructions are augmented by appropriate instructions placed on the general arrangement drawings and operating diagrams, and manufacturer's instructions. Should the plant tests indicate any modifications in these instructions, appropriate steps will be taken to assure that the operators are fully informed as to the revisions in these instructions.

Denver, Colorado
August 3, 1948

CC: H. S. Byther
    F. B. Follum
    H. H. Plumb
    I. L. Wightman

I. A. Wightman
Memorandum

To: Chief Engineer
From: R. E. Glover
Subject: Granby Pumping Plant — Colorado Big Thompson Project.

1. Introduction

By letter of February 4, 1948, from Chief Engineer to Director of Region 7, subject, "Elimination of Surge Tanks, Granby Pumping Plant, Colorado Big Thompson Project," the Region was notified that due to the difficult foundation conditions it has been decided to proceed with the design on the basis of the elimination of surge tanks.

This decision was made following the completion of analysis which took into account certain favorable changes of profile, and manufacturers data on the flywheel effect of pumps and motors, pump characteristics, and automatic valve operation.

2. Pressure Tests

Since analyses of the hydraulic conditions show negative pressures occurring in the penstock following power failure, it is considered advisable to conduct a pressure test to determine the actual operating conditions as soon as the plant can be operated. It is suggested, therefore, that one of the Bureau's oscillograph trucks, provided with special pressure-cell equipment, be sent to this plant to conduct a test at the time the motors and pumps are tested. These tests should include measurement of pressure variations on both the intake and discharge sides of the pump, and at several points along the penstock where negative pressures may be expected to occur.

These measurements would be recorded by the oscillograph, together with such supplemental data from the electrical and mechanical systems as would permit a correct comparison of the results of these tests with the data obtained from the analyses. If, as a result of these tests it is found that the pressure conditions are less favorable than the computations would indicate then measures can be taken to rectify them. It is anticipated that this plant will be ready to operate by December 1, 1949.
3. **Recommendations**

It is recommended that authority be given at this time to arrange for the making of these tests, and for the purchase of pressure-cells, wire, or other accessory equipment which might be necessary. It is estimated that the cost of this series of tests, exclusive of overhead, but including the cost of accessory equipment would be $1,000.

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Robert E. Glover
Head, Technical Analysis Section