

48. NPIC CHRONICLE V - Halligan Dam is Built

*As time goes by, the Company's stress becomes more pronounced both in and between the lines of the Board minutes.*¹

20th Month: March 1908. Payment of property taxes are delayed until June. The telephone line is abandoned.² Engineer Sweigart is discharged, his field notes turned over. All work on Halligan is discontinued.

21st Month: April 1908. Negotiations with Walter Sharpe concerning his company's continued involvement with Halligan. Sharpe agrees to cancel existing contract and bid on remaining work if NPIC can get additional funding. Sharp, in aid of private refinancing of the project, to go to Colorado Springs to try to negotiate release of Halligan from deed of trust securing the NPIC bond issue. Leaves on 4:00 pm train.

22nd Month: May 1908. Board decides to cover cement house at Halligan with tarps.

24th Month: July 1908. After discussion with Walter Sharpe Construction's representative, Board agrees to pay balance of outstanding bill and conduct an inventory at the construction site of machinery and supplies preparatory to making Sharpe a purchase offer.

26th Month: September 1908. Board gives Sharpe a lowball offer of \$4,000 "for the entire outfit". Sharpe asks time to consider.³

27th Month: October 1908. Board decides to defer settlement with Sharpe "until such time as we can see our way out."

28th Month: November 1908. Board decides to employ an engineer to draw up plans and specifications for constructing Halligan Dam to a height of eighty feet.

31st Month: February 1909. Annual stockholders' meeting approves doubling NPIC bond debt to

\$400,000 and finishing Halligan Dam to a height of fifty-seven feet. If sufficient bonds cannot be sold, there will need to be a \$15 per share assessment.

32nd Month: March 1909. Board continues discussions with Sharpe about purchase of machinery at Halligan - no resolution.

33rd Month: April 1909. A proposal by the Deputy State Engineer, G. N. Houston,⁴ to redesign Halligan Dam as a reinforced concrete structure to replace the current plan of *Cyclopean Masonry*.⁵ He claims a savings of 1/4 to 1/3 and will assure approval by the State Engineer!⁶ He proposes to do the redesign for 20% of the savings realized.

34th Month: May 1909. Agreement reached with Engineer Houston to do the reinforced concrete redesign for a fee of \$500. Will guarantee savings of at least \$5,000 or forfeit his fee.

35th Month: June 1909. Board ponders revolutionary new design and votes for delay of 7-10 days to "inquire about soundness of design". Responding engineers' opinions are reserved to skeptical and none in writing. Board votes to approve new design.

36th Month: July 1909. Bid based on price per units of cement and stone awarded to C. G. Shelly Contracting Company, a prominent bridge contractor with the provision that the NPIC Board "...may increase or diminish the size of the structure, as we may see fit...".⁷

37th Month: August 1909. Board meets with Engineer Houston and Assistant Engineer Browning at Halligan Dam. Engineer Snively to help with contouring survey to State Engineer's specifications. Arrangements made to hire an inspector for the stone crushing operation and another for the cement mixing plant.

38th Month: September 1909. Construction of the dam structure is underway.

46th Month: April 28 1910. "*The Halligan Dam is Built.*" Engineer Littel Snively's field notes.

The Halligan project went through engineers like a hot knife through butter. From conception to completion, by my count, the design height was changed four times (Halligan Dam stands seventy feet tall today), and the fundamental construction method was radically changed in the middle of the project.

Halligan Dam is a pioneering marvel of haphazard project management, cliff-hanger financing, wonky engineering, hasty design decisions and dogged construction - in a word, visionary.

It is a testament to the concealed nature of Phantom Canyon that Halligan Dam escaped the notice it probably deserved and thus never made it onto a National Register. ...but imagine what a deal it would have been if its original design in *Cyclopean Masonry* had survived the fray!

¹ Back in the Spring of 1907, typewritten minutes gave way to handwritten ones - an early indication, of tightening purse strings. As meetings grow tense, the secretary's hand grows increasingly cramped and crabbed, then relaxes again as resolutions are agreed and money problems surmounted or shelved.

² The Minutes note an offer to the Company from Evan Roberts' father, George, and uncle, Earnest, of a nickel each for the abandoned telephone poles.

³ I suspect the Board heaved a sigh of collective relief upon Sharp's delay request because, NPIC did not have the money to make good on this offer at the time.

⁴ G. (Gavin) N. Houston (1870-1950) was a competent engineer. A graduate of Princeton.

⁵ Mycenaean (Greek - ca 1500 BC) stone work using carefully fitted rough boulders and little or no mortar. Incan stone work (Peruvian - ca 1200 AD) in the Western Hemisphere is similar but more refined.

⁶ In those days, there was apparently a more relaxed relationship with the concept of 'conflict of interest' in matters of this sort.

⁷ Not clear what happened to Walter Sharpe.



Building up the base



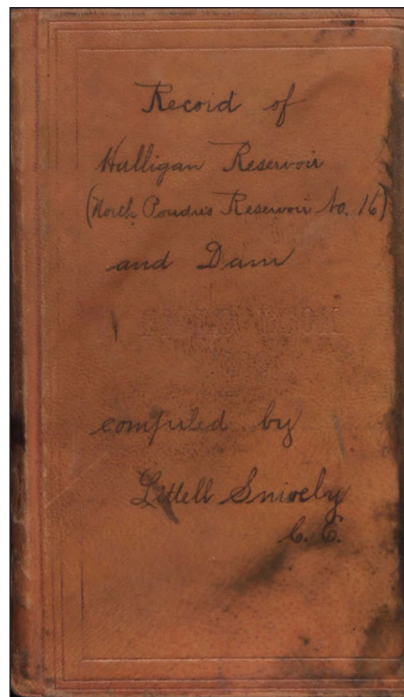
Arch halfway built - looking east



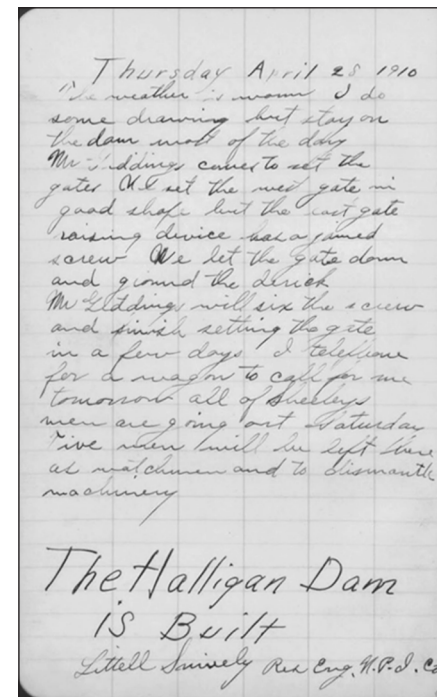
Downstream face



Upstream face



Littell Snively - field notebook



Littell Snively - field notes - April 28, 1910