

1 Q. Re: CBA, Rev. 1, vol. II, Wabush Terminal Station Upgrades, Attachment 3, Lab West System
2 Expansion Study, Wabush Terminal Station Recommended Upgrades, page 9 (p. 455 pdf)

3 Citation 1 (p. 12, page 458 pdf):

4 Since the Labrador Expansion Study was filed in 2018, SC3 has been fully
5 commissioned by IOC and is now operational by nature of a short term
6 operational agreement. This agreement allows SC3 to provide additional
7 capacity for the sole use of IOC and is not available to other Labrador West
8 customers.

9 Hydro is currently in negotiations with IOC with respect to exploring long-term
10 operating arrangements for SC3 where these assets would be available to
11 support all customers. In support of these negotiations, Hydro engaged Stantec
12 Consulting Ltd to develop cost estimates for alternative sources of reactive
13 support to ensure firm supply for loads in western Labrador. Based on results on
14 this analysis, the purchase of a 60 MVAR capacitor bank and 27 MVAR reactor
15 would present the lowest cost alternative if SC3 were not available as a long-
16 term solution. The Labrador West Voltage Support Cost Estimate Summary
17 prepared by Stantec is provided in Appendix D. (underlining added)

18 Citation 2 (p. 14, page 460 pdf):

19 However, negotiations with IOC are ongoing with respect to the long-term
20 operation of SC3. While a decision will be made with respect to SC3 later in
21 2020, other upgrades at the Wabush Terminal Station are required irrespective
22 of the outcome of these negotiations. These proposed system additions include
23 the installation of two, new 125 MVA transformers and the installation of a 23
24 MVar capacitor bank.

25 Citation 3 (Appendix D, p. 3 (p. 483 pdf)

In 1997-1998, a failure occurred on synchronous condenser two (SC-2) at the Wabush Terminal Station (WAB TS). To restore full operational capacity to the Wabush Terminal Station (WAB TS), a third synchronous condenser (SC-3) was installed and connected to Bus 2 (Bus 15) in an emergency scenario to act as a replacement while SC-2 repairs were completed. The SC-3 asset is wholly owned by the Iron Ore Company of Canada (IOCC). After SC-2 was repaired, SC-3 was removed from service and minimal maintenance completed. In 2012, IOCC reestablished the SC-3 project with the goal of putting SC3 in service permanently, in the WAB TS. Construction commenced in 2012 and the unit was partially commissioned in September 2014 and was never released for service.

26 ...

The preferred Alternative of 2018 Study involved the addition of a 23MVAR capacitor bank for voltage support and replacement of transformers T4 and T5 with 125MVA units. This solution assumed that IOC's SC3 unit with its 60MVAR reactive power capability and 27MVAR reactor was available in the base solution without being purchased from IOC. This option gives a firm Labrador West transmission capacity of 383MW with the single loss of any major transmission element with the exception of the 230kV transmission lines. Overall, this solution requires the addition of 83MVARs of reactive voltage support, SC3 and 23MVARs of capacitor banks.

1 Citation 4 (Appendix D, p. 8 (p. 488 pdf)

<u>Cost Estimate Summary - Options 1 -4</u>		
Option #1	New 23 MVAR Capacitor Bank (including purchase of SC-3)	\$ 32,578,000.00
Option #2	New 83 MVAR Capacitor Bank plus 27 MVAR Reactor	\$ 7,540,000.00
Option #3	New +60 MVA Synchronous Condenser plus 23 MVAR Capacitor Bank	\$ 21,928,000.00
Option #4	New +83/-27 MVAR Static VAR Compensator	\$ 20,942,000.00

2 Citation 5 (Appendix D, p. 7 (p. 487 pdf)

4.0 Summary

In the fall of 2019, NLH completed an estimate for the design, supply, installation and commissioning of three new 25 MVAR Cap Banks. As part of that analysis, IOCC were informed the overall price was approx. \$14.8 million. The NLH estimate is considered a higher level, conservative estimate to install capacitor banks and associated equipment. This was based on a general maturity level of the work scope and is considered an AACE Class 5 cost estimate. The Stantec estimate is based on a work scope with a much higher level of definition and therefore more appropriate to be defined as a Class 3 cost estimate. The differences between the estimate classes account for the variation in the overall project costs. The AACE Generic Cost Estimate Classification Matrix can be found below in Table #5:

- 3 a. Please reconcile the statement in Citation 3 that SC3 was never released for service with the
- 4 statement in Citation 1 that it has been “fully commissioned”.
- 5 b. Please provide an update concerning discussions with IOC regarding SC3 since the CBA was
- 6 filed in July 2020.

- 1 **c.** Please confirm that the costs for Options 1-4 described in Citation 4 are additional to the
2 \$11.6 million cost of the Wabush Terminal Station Upgrades proposed in the 2021 CBA.
- 3 **d.** Please explain their relationship to the four options addressed in the Stantec Report
4 (Appendix D) to the “three new 25 MVAR Cap Banks” referred to in Citation 5, for which NLH
5 completed an estimate for design, supply, installation and commissioning in 2019.
- 6 **e.** Please confirm that if Option #2, which has costs 3-4 times lower than the other options, is
7 retained SC3 will no longer be needed. In that eventuality, would it provide any additional
8 benefit to IOC?
- 9 **f.** Please confirm that the cost estimate for Option 1 is based on the book value of SC3. If, as it
10 appears in Option 2, Hydro can obtain equivalent service at a far lower cost, is it reasonable
11 to attribute this value to SC3? Please elaborate.

12
13

14 A.

- 15 **a.** Citation 3 refers to a 2012–2014 time period. The project was not fully completed when Iron
16 Ore Company of Canada (“IOC”) decided to shut down the project in 2014 and therefore SC3
17 was never released for service at that time (2014).

18 Citation 1 refers to a post-2018 time period. In 2019, IOC completed the full commissioning
19 of the SC3 unit and it was released for service in the fall of 2019 under a temporary
20 operating agreement.

- 21 **b.** Since the filing of the 2021 Capital Budget Application (“CBA”) in August of 2020, IOC and
22 Newfoundland and Labrador Hydro (“Hydro”) have exchanged correspondence regarding
23 SC3. Both parties continue to discuss the matter but there is no final agreement at this time.

- 24 **c.** The \$11.6 million cost of the Wabush Terminal Station Upgrades proposed in the 2021 CBA
25 includes the cost of a 23 MVAR capacitor bank which is estimated to be \$2 million. When

1 considering potential incremental costs to the proposed project, this \$2 million value can be
2 subtracted from each of the listed alternatives.¹

3 **d.** Hydro considered a range of alternatives to address reactive power limitations at the
4 Wabush Terminal Station, including the use of IOC synchronous condenser SC3, the
5 purchase of a new synchronous condenser, the application of capacitors banks, and the
6 application of a static VAR compensator. The proposed solution involving three new 25
7 MVAR capacitor banks and associated equipment was found to be the lowest cost
8 alternative. To validate the estimates, Hydro engaged Stantec Inc. to develop Class 3 cost
9 estimates for the four alternatives. The capacitor bank option (Option 2) was further refined
10 to include an 83 MVAR total capacitor bank addition, as opposed to 75 MVAR, and the 27
11 MVAR reactor was added for consistency with the other three options.

12 **e.** If Option 2 were implemented, Hydro would be able to supply a firm capacity of 387 MW
13 without the use of SC3, thus ensuring firm delivery of the full baseline load forecast for
14 specified contingencies, in accordance with Transmission Planning Criteria. On this basis,
15 SC3 would not be required.

16 SC3 would only provide a benefit in the event of contingencies not included within
17 Transmission Planning Criteria. Specifically, such contingencies would involve the outage of
18 a 230 kV transmission line. In the event of such a contingency, the reactive support provided
19 by SC3 would provide a capacity benefit to IOC of approximately 20 MW.

20 **f.** It is confirmed that the cost estimate for Option 1 is based on the net book value of SC3 as
21 of December 31, 2018. Given that Option 2 provides sufficient reactive support to meet
22 system requirements in accordance with Transmission Planning Criteria, any incremental
23 costs associated with the other alternatives would not be justifiable.

¹ The first three alternatives would be adjusted such that 23 MVAR of capacitor banks would be removed from the project scope. The alternative involving the addition of a static VAR compensator would be adjusted to have a +60/-27 MVAR rating.