(xii) Some touch-up cleaning and painting had to be done on the mitre gates at all relevant locks.

5. Yes.

6. All changes have been made with the exception of a small amount of welding and touch-up painting of mitre gates at the St. Lambert and lower Beauharnois locks. The changes were ordered shortly after the dates of the tests.

ST. LAWRENCE SEAWAY—CONTRACT FOR SKIN PLATES, ETC.

Question No. 94—**Mr. Argue:**

1. What was the name of the contractor for skin plates, intercostal and girders of mitre gates and sector gates on the St. Lawrence seaway?
2. What was the accepted price on this original tender by the St. Lawrence seaway authority?
3. Was any change made in regard to the quality of steel in this contract?
4. If so, (a) what was the name of the official or company who requested it; (b) the date of request; (c) date of acceptance by the authority; (d) the names of officials of the authority, their ratings, and who agreed to it; (e) the reason for acceptance; (f) the nature of the change?
5. What was the quality of ordinary steel accepted, and what was the copper content?
6. What was the quality of steel and the copper content in the original specifications for (a) skin plates; (b) lower side mitre gates, and what quality steel was actually accepted?
7. What was the difference in the value of steel on this contract between that called for in the original specifications and the steel accepted by the seaway authority?
8. Was any reduction made in the accepted contract price to cover this change in steel specifications?
9. If so, what was the amount, date of payment, and amount of actual payment?

Answer by: **Hon. George H. Hees (Minister of Transport):**

The St. Lawrence seaway authority advises as follows:

1. Mitre gates: Canadian Vickers Limited; sector gates: Dominion Bridge Company Ltd.

2. Mitre gates: $4,269,825 (estimated); sector gates: $2,589,477 (estimated).

3. Mitre and sector gates: yes, to a minor extent and of such nature that the strength and durability of the gates would not be adversely affected.

4. Mitre gates: (a) Canadian Vickers Limited; (b) November 23, 1956, December 18, 1956, December 27, 1956, January 15, 1957, February 13, 1957, June 13, 1957, August 2, 1957; (c) November 26, 1956, December 21, 1956, December 28, 1956, January 23, 1957, February 14, 1957, June 14, 1957, August 7, 1957; (d) A. G. Murphy, chief engineer; (e) to expedite fabrication by use of readily available materials; (f) (i) About 8 per cent of the structural steel was accepted with a copper content of 0.20 per cent or better, which is the standard usually specified for copper bearing steel, in lieu of 0.25 per cent minimum actually specified. The reduction will have no significant effect upon the anti-corrosive properties and no effect whatsoever upon strength; (ii) gate seal angles, requiring a minimum of welding, were of ASTM A7 in lieu of ASTM A373-55T steel. In the latter, the carbon content is rigidly controlled to improve weldability; (iii) mitering guide shims, requiring no welding, were of mild steel in lieu of ASTM A373-55T steel; (iv) some small angles for walkway supports were of mild steel in lieu of ASTM A373-55T steel; (v) pin plugs, strut connection pins and eye-bar pins were of ASTM A322-52, grade 3140 hot holled bar stock in lieu of ASTM A237-55, class A, grade AISI 3140, forged steel. The two would be equally suitable; (vi) AISI 414C in lieu of AISI 3140 grade steel was approved for bolts and threaded rods to fasten timbers to gates and recesses.

Sector gates: (a) Dominion Bridge Company Limited; (b) November 12, 1956; (c) November 21, 1956; (d) A. G. Murphy, chief engineer; (e) to expedite fabrication by use of readily available materials; (f) (i) about 2¼ per cent of the structural steel was accepted with a copper content of from 0.21 to 0.23 per cent in lieu of 0.25 per cent minimum actually specified; (ii) Bolts of SPS 245 steel with a minimum yield point of 70,000 p.s.i. after normalising were accepted in lieu of SAE 3140 steel.

5. Mitre gates: ASTM A373-55T, as specified, with copper content as stated in paragraph (i) in answer to question 4(f). Sector gates: CSA-G40.4-1950, as specified, with copper content as stated in paragraph (i) in answer to question 4(f).

6. Mitre gates: ASTM A373-55T, structural steel for welding, with a minimum copper content of 0.25 per cent was specified for (a) skin plates and (b) lower side mitre gates. That accepted was as specified except for about 14½ per cent of the tonnage of (a) skin plates which had a copper content of from 0.21 to 0.24 per cent. Sector gates: CSA-G40.4-1950, medium structural steel, with a minimum copper content of 0.25 per cent was specified for (a) skin plates and (b) lower side sector gates. That accepted was as specified except for about 4¾ per cent of the tonnage of (a) skin plates and about 1¾ per cent of the tonnage of (b) lower side sector gates which had copper contents of from 0.21 to 0.23 per cent.

7. Mitre gates, (difference in value): (i) Reduced copper content, nil; (ii) gate seal angles, $0.0045 per lb.; (iii) Mitering guide shims, $0.0055 per lb.; (iv) Walkway supports, $0.0030 per lb.; (v) 8" dia. pins, $0.0365 per lb.; 2¼" hex. bars, $0.0100 per lb.; (vi) Bolts and threaded rods, nil.