



## Broadcasting Decision CRTC 2005-168

Ottawa, 20 April 2005

**Larche Communications (Kitchener) Inc.**  
Kitchener-Waterloo, Ontario

*Application 2004-0663-8  
Public Hearing in the National Capital Region  
29 November 2004*

### **CIKZ-FM Kitchener-Waterloo – Technical change**

*In this decision, the Commission **approves** the application by Larche Communications (Kitchener) Inc. (Larche), to amend the broadcasting licence for the radio station CIKZ-FM Kitchener-Waterloo, by changing the frequency from 99.5 MHz to 106.7 MHz, and by changing the authorized contours of that station.*

*In other decisions published today, the Commission has disposed of three other applications which also proposed the use of frequency 106.7 MHz, and were thus technically mutually exclusive with the Larche application.*

### **The application**

1. The Commission received an application by Larche Communications (Kitchener) Inc. (Larche) to amend the broadcasting licence for the radio programming undertaking CIKZ-FM Kitchener-Waterloo, authorized in *Country FM radio station in Kitchener-Waterloo*, Broadcasting Decision CRTC 2003-153, 14 May 2003 in order to change the frequency from 99.5 MHz (channel 258A) to 106.7 MHz (channel 294B1). The licensee also proposed to change the authorized contours of CIKZ-FM by increasing the average effective radiated power from 1,600 watts to 2,000 watts and the antenna height from 140.1 meters to 200.3 meters.
2. At the 29 November public hearing, the Commission also considered three other applications proposing the use of the frequency 106.7 MHz, the same frequency as that proposed for use by Larche. The four applications, as filed, were thus technically mutually exclusive.
3. In *English-language FM radio station in Haldimand County*, Broadcasting Decision CRTC 2005-169, *FM radio station in Brantford*, Broadcasting Decision CRTC 2005-171 and *CJTW-FM Kitchener – Technical change*, Broadcasting Decision CRTC 2005-170, all published today, the Commission sets out its determinations on the three other applications proposing the use of frequency 106.7 MHz.

## Technical concerns

4. Larche stated that the current operation of CIKZ-FM on frequency 99.5 MHz receives objectionable interference from a high-power U.S. radio station, WDCX (FM), located in Buffalo, New York, which also operates on the same 99.5 MHz frequency. Larche explained that, although some co-channel interference by WDCX (FM) was predicted at the time it applied for the 99.5 MHz frequency, the actual problem is much greater than its engineers originally anticipated and that the nature and severity of the problem has now been determined to be caused by a rare transmission phenomenon called “thermal ducting”, which is discussed later in this decision.
5. The licensee contended that this unforeseen problem is having an adverse impact on its ability to meet audience and revenue targets because listeners are experiencing poor and unreliable signal reception from CIKZ-FM. Larche indicated that the signal problem is having a negative impact on CIKZ-FM’s advertising sales, and that Larche would not be able to sustain its viability if it experiences a lengthy period of financial losses.
6. In a letter dated 7 September 2004, Larche indicated that it had hired several technical consulting firms to help resolve this problem. Elder and Associates (Elder), proposed three options, which Larche indicated were all dismissed:
  - Increase power at the present transmitter site. This option would require that the Canadian Broadcasting Corporation (CBC) accept interference to its station CJBC-4-FM London. In a letter dated 2 June 2004, the CBC exercised its right to not accept this interference, and the option was therefore dismissed by Larche.
  - Relocate the CIKZ-FM antenna to the Global tower in Paris, Ontario. This option would only allow a maximum effective radiated power (ERP) of 1.4 kW, and was dismissed because that ERP would be inadequate to serve CIKZ-FM’s market.
  - Construct a new transmitter tower south of Kitchener. This option was dismissed because it would be cost prohibitive.
7. Larche further stated that in June 2004 it requested ATS Transmission Solutions (ATS) to analyze CIKZ-FM’s signal difficulty and propose a solution. ATS proposed a test in which the height of the antenna would be temporarily increased. Larche received approval from the Department of Industry (the Department) for a temporary change of antenna height, and the test was undertaken. According to Larche, the changes failed to adequately address the interference problem.
8. Larche indicated that all of the technical consultants have agreed that the use of 106.7 MHz was the only practical solution to the signal deficiency of CIKZ-FM. Larche stated that the change would result in a better quality signal to its primary market of Kitchener-Waterloo, as well as an increase in the station’s authorized contours.

## **Interventions**

9. The Commission received interventions, including numerous form letters, in support of this application, and one intervention opposing it, submitted by Telephone City Broadcast Limited (TCB), licensee of CKPC and CKPC-FM Brantford. TCB was also an applicant at the 29 November public hearing, proposing the use of frequency 106.7 MHz for a new FM radio programming undertaking to serve Brantford.
10. TCB expressed the view that the Larche application does not represent the best possible use of frequency 106.7 MHz. In the opinion of the intervener, when Larche applied for the use of frequency 99.5 MHz in 2002, it understood and accepted the technical limitations that would be associated with the use of that frequency. TCB was further of the view that Larche has not fully explored all of its options with its current frequency, including a new tower location.

### **The applicant's reply**

11. In reply to TCB's intervention, Larche argued that the intervener has ignored the central theme of the Larche application, namely, interference caused by thermal ducting, which was unknown and not anticipated by any of the parties that applied for the use of 99.5 MHz in 2002.
12. Larche explained that CIKZ-FM is not delivering a reliable signal within the station's licensed market and primary 3 mV/m contour due to "a rare transmission phenomenon called thermal ducting, which our engineers (along with all others that applied for 99.5 MHz) could not have anticipated."
13. In the present case, according to the licensee, the signal of CIKZ-FM experiences serious interference within its service area from a "co-channel" station (operating on the same 99.5 MHz frequency), WDCX (FM). In a letter filed by the licensee as part of its reply, D.E.M Allen & Associates, Consulting Engineers (Allen), described thermal ducting as a co-channel interference due to atmospheric conditions causing variations in the propagation of signals through layers of warm and cold air. These layers can trap radio signals and conduct the signals over long distances causing high signal levels at distances well beyond the normal range of reception. Allen further indicated that this is a phenomenon that is well known and documented by the Department and the communications industry, but that there would have been no way for Larche to know about the severity of the thermal ducting prior to CIKZ-FM going on-air.
14. The licensee reiterated that the CIKZ-FM signal deficiency has been investigated and confirmed by four technical consultants as well as documented in the form of letters, emails and phone calls by numerous listeners.

15. Larche further submitted that, after several weeks of testing various technical scenarios (including a significant increase of the CIKZ-FM antenna height), its technical consultants and the Department all reached the conclusion that thermal ducting will persist, even with a change of power or tower location. Larche added that the engineers have determined that the only practical solution to the problem is a change of frequency.
16. Larche argued that licensees must be able to fulfil their commitments, and that without approval of this proposal, the operation of CIKZ-FM would be severely handicapped.

### **The Commission's analysis and determination**

17. In making its determination on this application, the Commission has considered the licensee's various attempts to find alternative solutions to the signal deficiency of CIKZ-FM. The Commission also notes that, in granting technical approval of this application, the Department noted that "greater than expected interference" had been received by CIKZ-FM from WDCX (FM) in Buffalo, New York.
18. In light of the above, the Commission is satisfied that the proposed use of frequency 106.7 MHz by Larche to resolve the signal deficiency of CIKZ-FM represents the best use of the frequency.
19. Accordingly, the Commission **approves** the application by Larche Communications (Kitchener) Inc. to amend the broadcasting licence for the radio programming undertaking CIKZ-FM Kitchener-Waterloo, in order to change the frequency from 99.5 MHz (channel 258A) to 106.7 MHz (channel 294B1), and to change the authorized contours of CIKZ-FM by increasing the average effective radiated power from 1,600 watts to 1,700 watts and by increasing the antenna height from 140.1 meters to 200.3 meters.
20. The Department has advised the Commission that the undertaking will have an average effective radiated power of 1,700 watts, rather than 2,000 watts as indicated in Broadcasting Notice of Public Hearing CRTC 2004-9, 30 September 2004.

### **Issuance of the licence**

21. The Department has advised the Commission that, while this application is conditionally technically acceptable, it will only issue a broadcasting certificate when it has determined that the proposed technical parameters will not create any unacceptable interference with aeronautical NAV/COM services.

22. The Commission reminds the licensee that, pursuant to section 22(1) of the *Broadcasting Act*, this authority will only be effective when the Department notifies the Commission that its technical requirements have been met, and that a broadcasting certificate will be issued.

Secretary General

*This decision is to be appended to the licence. It is available in alternative format upon request, and may also be examined in PDF format or in HTML at the following Internet site: <http://www.crtc.gc.ca>*