Cards of typical signatures
ABB UC

Version 0 **Rev.0**

December 17, 2009

Cette version est une version préliminaire et temporaire pour **diffusion très limitée**.
Cette version fait référence au logiciel DIAC dont le développement est arrêté par Hydro-Québec.

Le logiciel OpenZen - Zensol (issu de nos logiciels existants CbaWin, GenWin, CbvWin, etc., copyright 1992 à 2009) remplacera DIAC totalement à court terme.

Il sera donc nécessaire de réviser et de corriger cette version, en supprimant notamment toutes les références à DIAC et en les remplaçant par les références équivalentes à OpenZen.

Merci de me contacter directement pour tout commentaire (bon ou mauvais), toute nouvelle idée, ainsi que toute suggestion d'amelioration de ce document ou du logiciel OpenZen et ces documents associés, dans le but ultime de l'obtention d'un logiciel et d'une documentation claire et pratique pour vous et tous nos utilisateurs. Tous vos retours d'information seront très appréciées.
Vous remerciant par avance pour votre collaboration,

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This version is a draft and temporary version for **limited distribution ONLY**.
This version refers to DIAC software whose development by Hydro-Québec is stopped.

The OpenZen – Zensol software (based on our existing softwares CbaWin, GenWin, CbvWin, etc., copyright 1992-2009) will completely replace DIAC in the short term.

This version needs to be reviewed and corrected by Tap-Changer specialists. Among other things, all references to DIAC software will be replaced by their equivalents in the OpenZen Software.

Text in red requires special attention and will be corrected.
If you want the original version of this text, please download the French document.

Please do not hesitate to contact me directly for any comment (good or bad), any new idea, or any suggestion regarding the improvement of this document or the improvement of the OpenZen software and any of its related documents, in order to ultimately obtain clear and useful documentations for you and all of our users. All of your feedbacks will be appreciated.
Thank you for your cooperation.

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Table 1: Features

Features of the family			
Motor	1. Single phase 2. Three phase	**Drive**	With springs
Brake	1. Mechanical 2. At DC current injection thru capacitor 3. At DC current injection thru diode	**Types of mechanisms**	1. BUE 2 2. BUD 1 3. BUB 1 4. BUF 2
		Number of OLTP	1 or 3
		Number of phases	3

Section I : Typical complete signatures

1. Single operation

The single operation consists of a movement upward or downward of the selector, followed by a transfer of the load through the switch.

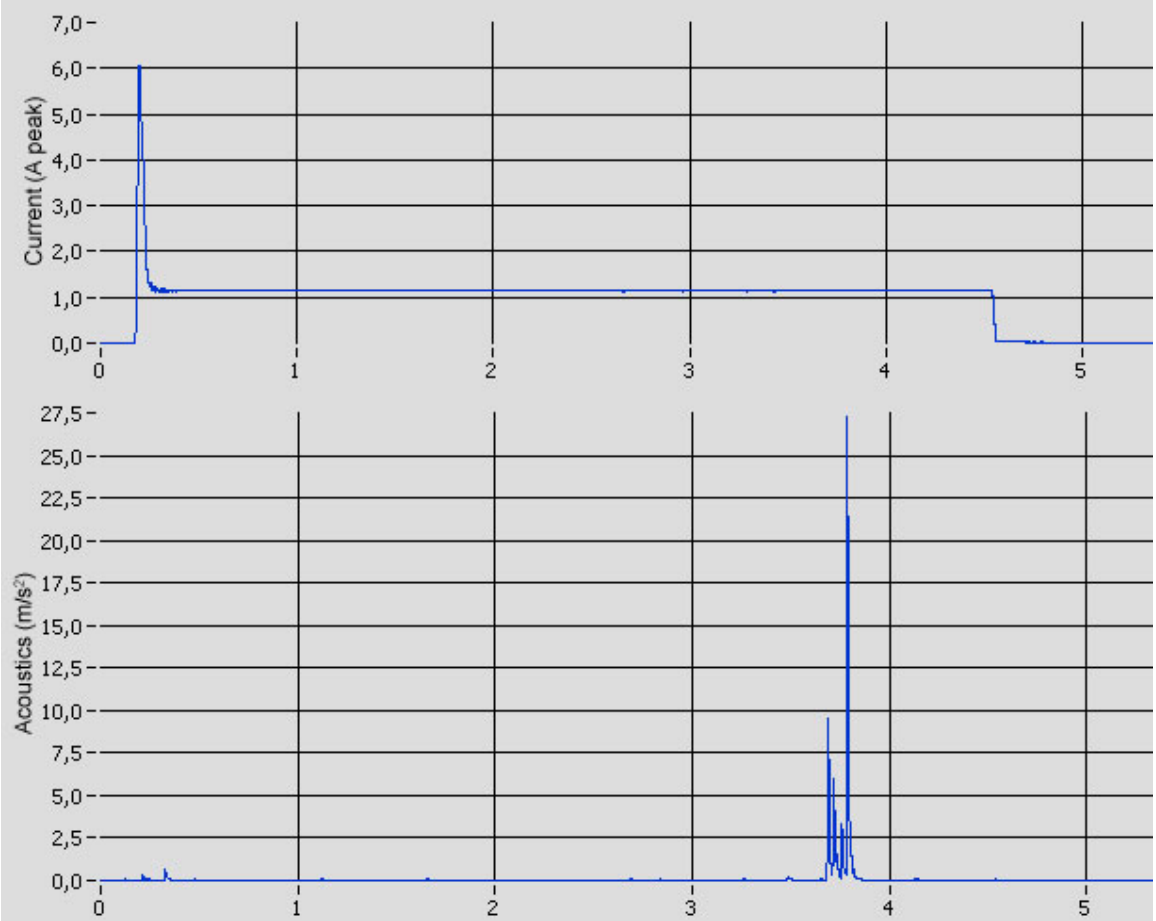

Figure 1 : Single operation upward of an ABB UCDRE (tap +8)

2. Dual operation (Operation of the inverter)

The tap-changer can access a second range of positions through the inverter. During the operation of the inverter, two switch operations follows one after the other, as shown on the acoustic signature below. It is important to note that the operation of the inverter and the selector are silent, as shown in **Figure 2**.

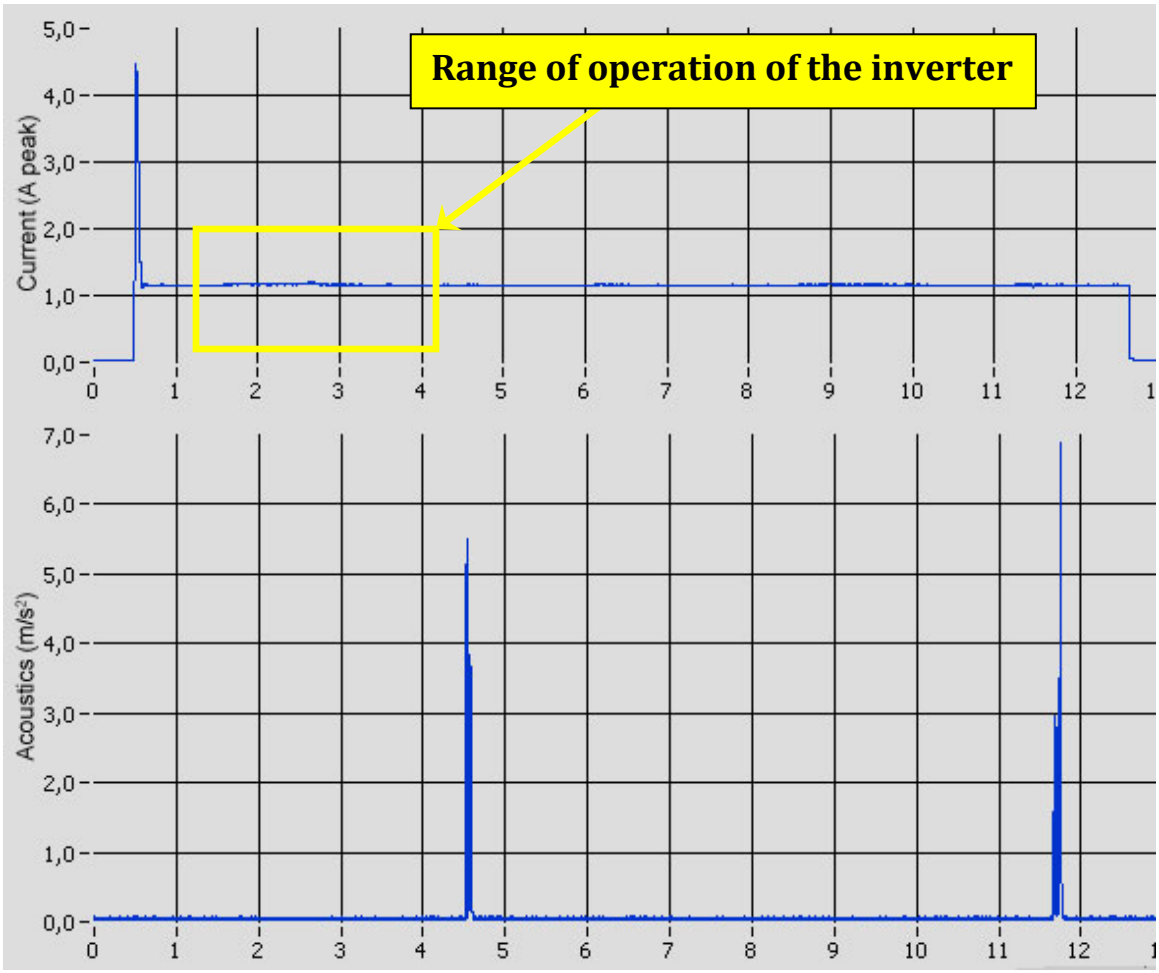

Figure 2 : Operation of the inverter for an ABB UCBRN (tap +10)

Section II : Typical switching

ABB UCB

Typical transition time = 56ms

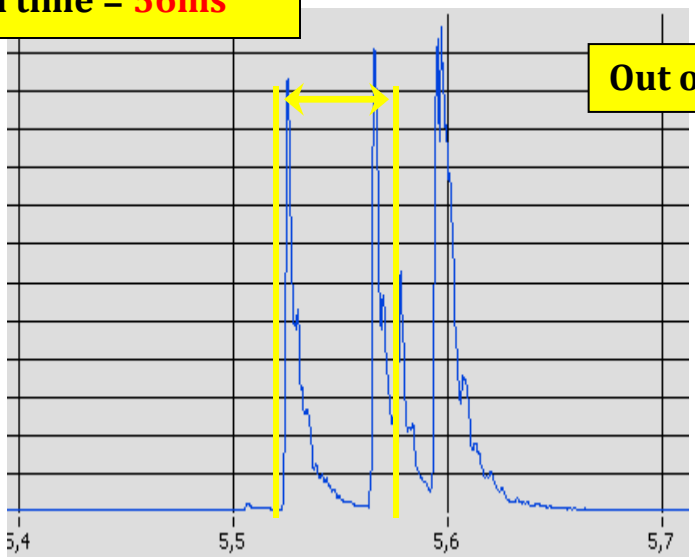

Figure 3 : ABB UCBRN switching at tap +2' in mode **Out of Service**

Typical transition time = 56ms

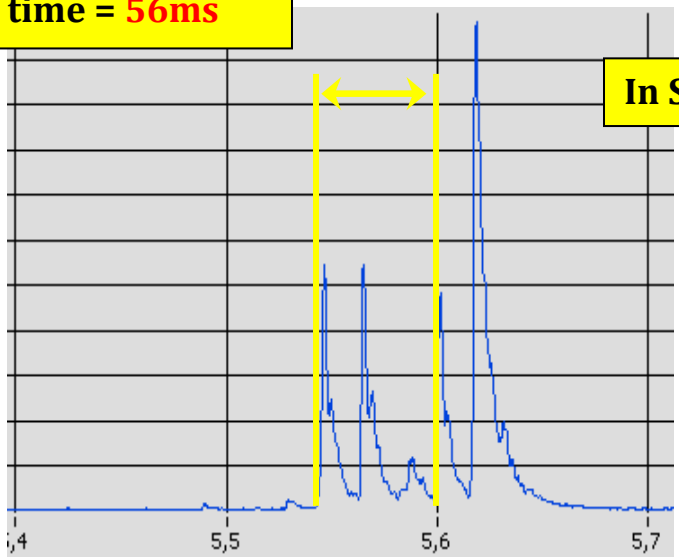

Figure 4 : ABB UCBRN switching at tap +2 in mode **In Service**

ABB UCC

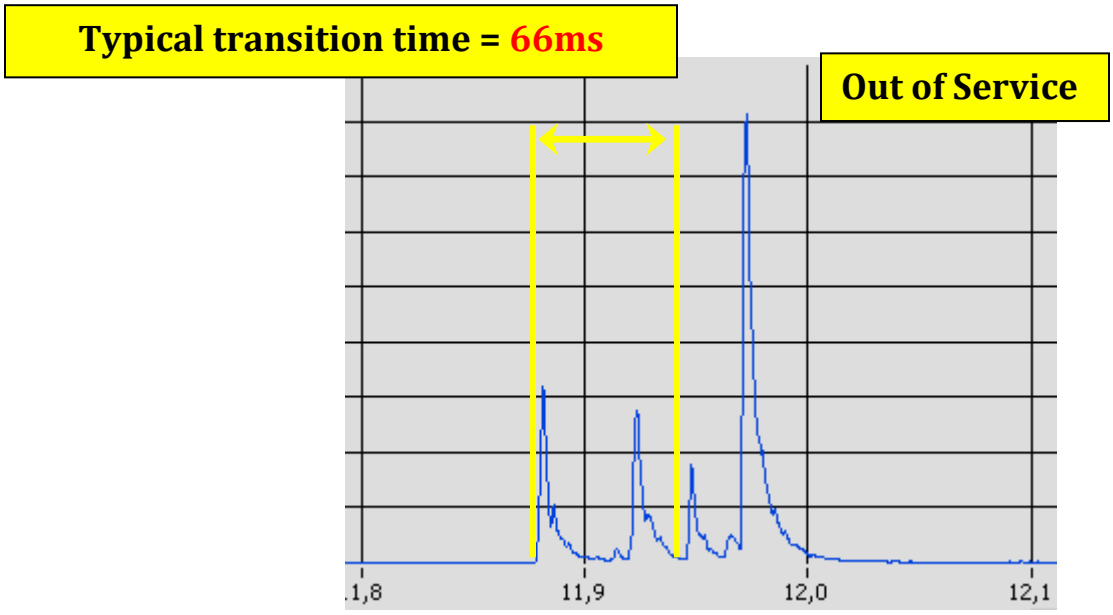

Figure 5 : ABB UCBRN switching at tap -8 in mode **Out of Service**

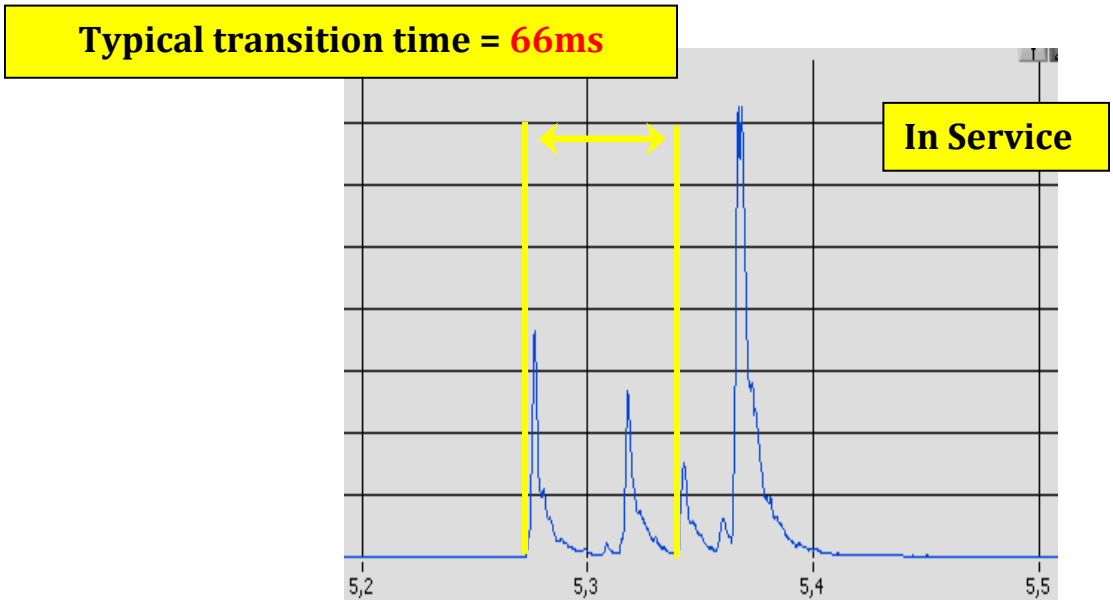

Figure 6 : ABB UCBRN switching at tap -4 in mode **In Service**

ABB UCD

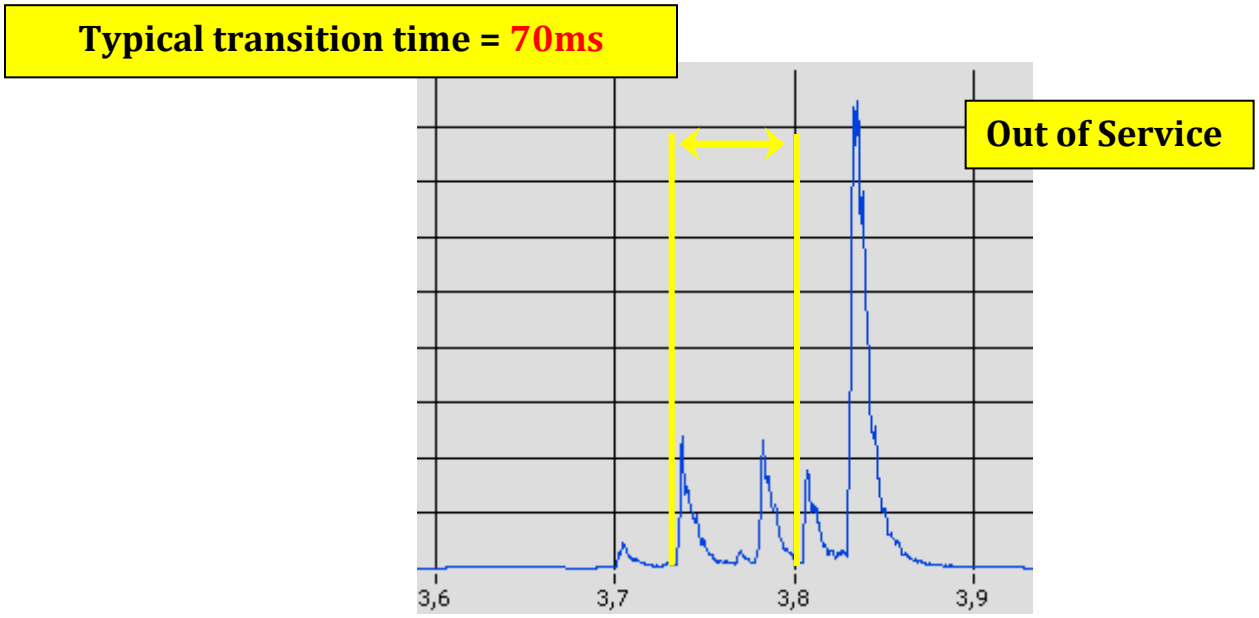

Figure 7 : ABB UCDRE switching at tap +8 in mode **Out of Service**

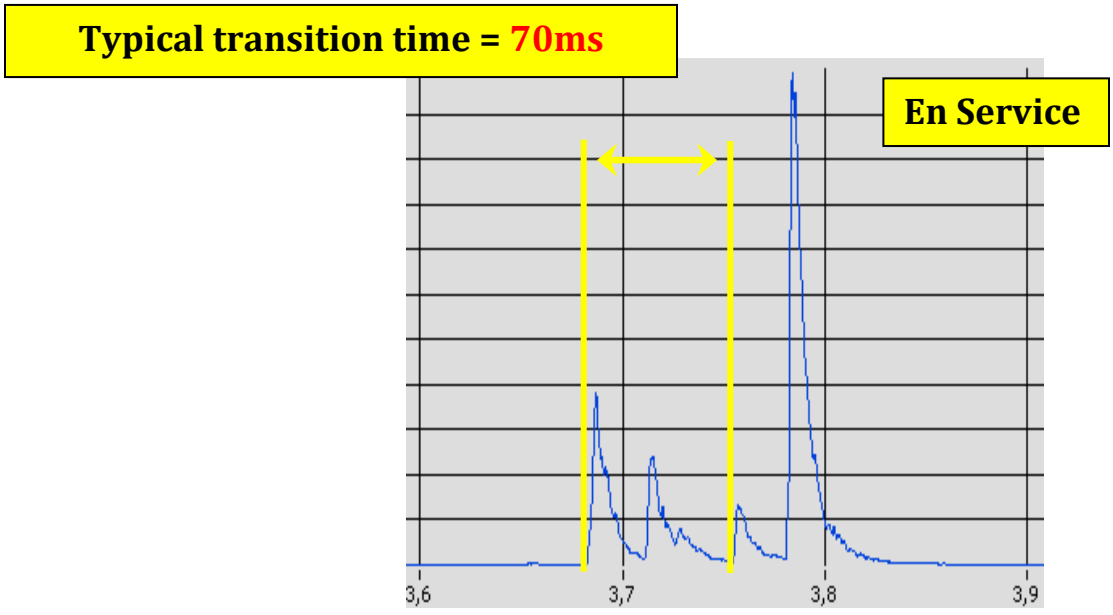

Figure 8 : ABB UCDRE switching at tap +8 in mode **In Service**

ABB UCG

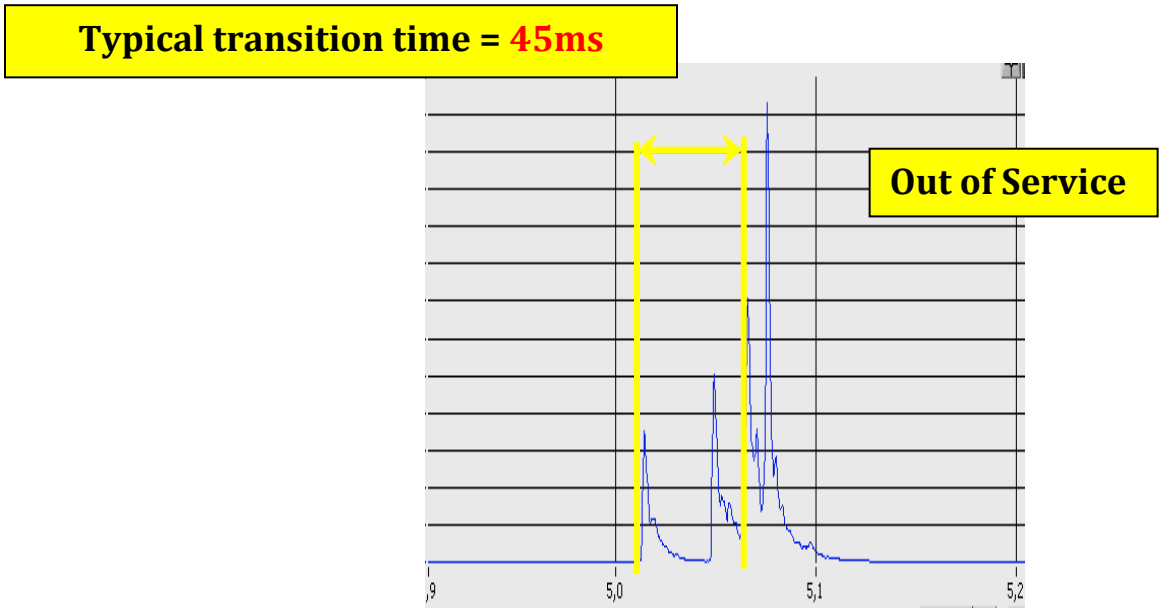

Figure 9 : ABB UCGRN switching at tap +6 in mode **Out of Service**

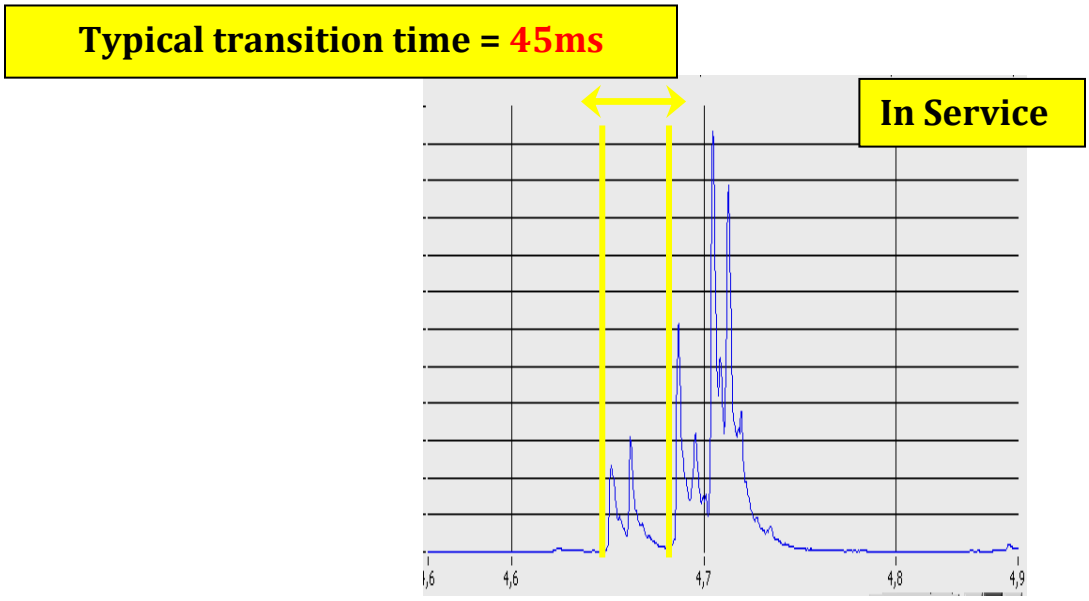

Figure 10 : ABB UCGRN switching at tap +6' in mode **In Service**

ABB UCL
Only 1 switch

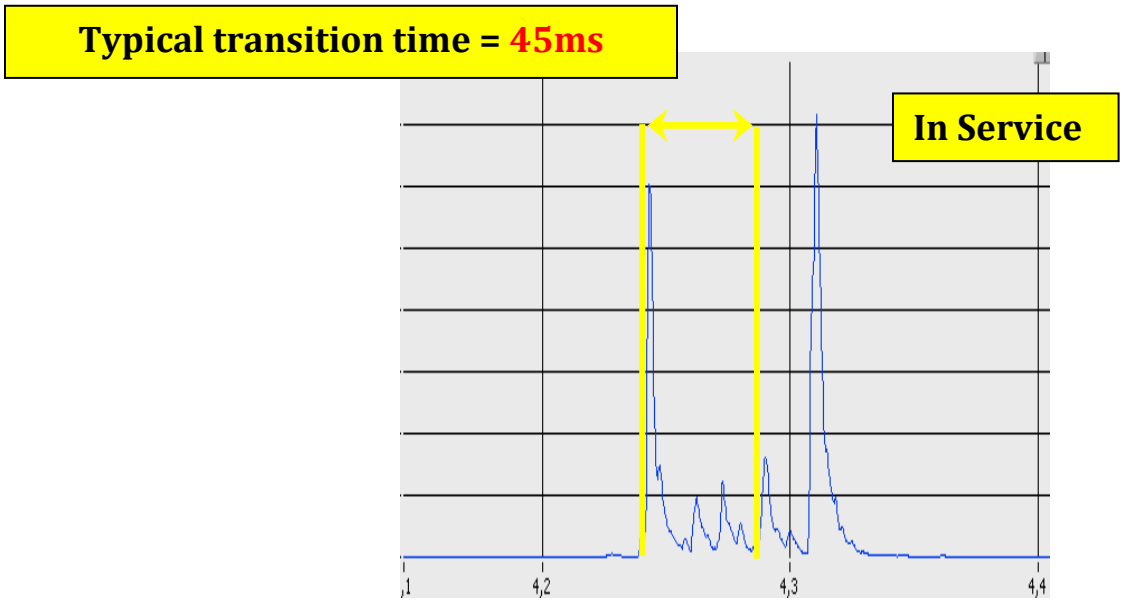

Figure 11 : ABB UCLRN switching at tap -4 in mode **In Service**

Three (3) single-phase switches within the same tank

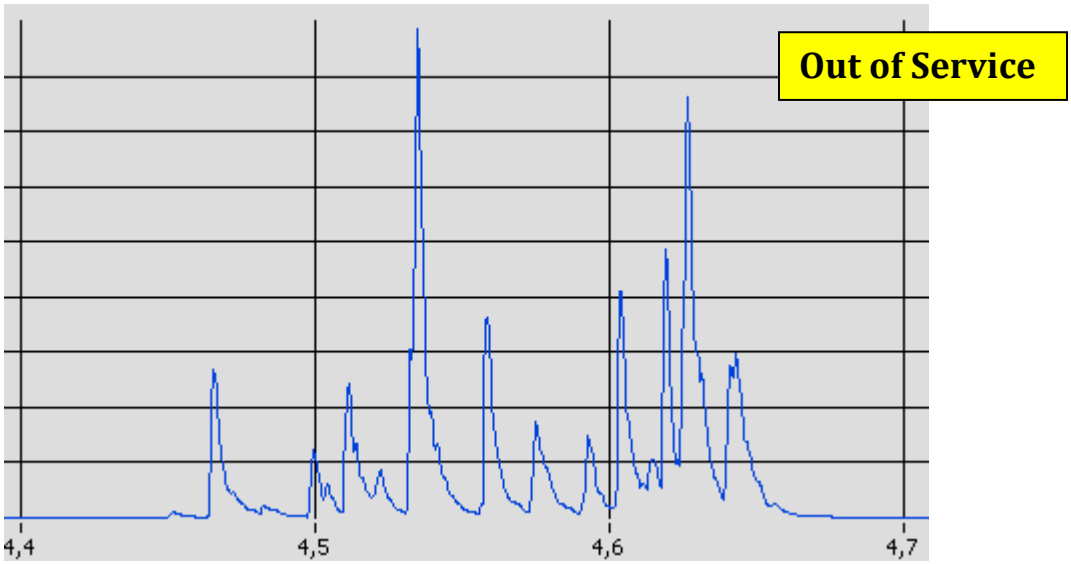

Figure 12 : ABB UCLRN switching at tap +12 in mode **Out of Service**