DCA-08-MR-009
Metrolink – UP Collision
Chatsworth, CA
September 12, 2008

SIGNAL GROUP FACTUAL

ADDENDUM

NTSB
National Transportation Safety Board
490 L'Enfant Plaza, SW
Washington, DC 20594-0001
www.ntsb.gov

Addendum to Signal Group Chairman's Factual Report
Prepared by: Timothy J. DePaepe, Signal Group Chairman

Accident:

NTSB Accident Number:	DCA 08 MR 009
Time/Date of Accident:	4:23 p.m. (PDT)/September 12, 2008
Railroad Owner:	Southern California Regional Rail Authority (Metrolink)
Train Operators:	Metrolink – Union Pacific
Location of Accident:	Los Angeles (Chatsworth) California

Signal Group:

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Gerald Muffley	CPUC – Associate Signal & Train Control Inspector 320 West 4th Street, Suite 500, Los Angeles, CA 90013 213-576-7072

Post Accident Inspection/Testing Of Signal System:

On September 12, 2008, the dispatcher lined up the route for the Leesdale Local to proceed eastbound from C.P. Davis onto the single track main line and through the siding at C.P. Topanga. The dispatcher then "stacked[1]" the route for the westbound movement of the Metrolink 111 to proceed west through C.P. Topanga.

On the day of the accident, the Digicon system did not send the command to clear the westbound signal at C.P. Topanga and the event recorder data in the field was devoid of any request to clear the westbound signal at C.P. Topanga.

The Digicon data logs of September 12, 2008, showed that the request for the westbound signal at C.P. Topanga to clear, was still in the queue of the Digicon System and was never sent to the Harmon Vital Logic Controller[2] (HVLC) at C.P. Topanga. As part of the testing of the signal system, investigators had the Metrolink dispatcher clear the eastbound signals (as they were for the Leesdale Local) from C.P. Davis through the siding at C.P. Topanga and clear the westbound signals (as they were for Metrolink 111) from C.P. Raymer to the westbound signal at C.P. Topanga. There was no evidence that the westbound signal command to C.P. Topanga was sent from the Digicon system to the vital signal equipment in the field. In order to verify the result of sending an improper command over an established route, the investigators tried to clear the westbound signal at C.P. Topanga to test the HVLC and see if the westbound signal request would clear the westbound signal. The HVLC would not act on the command and did not clear the westbound signal.

With the eastbound signal at C.P. Topanga clear, investigators applied battery to the westbound green signal. This illogic and improper signal request resulted in the HVLC putting the eastbound signal from clear to red (stop) and running a 6-minute timer effectively locking out any and all commands to C.P. Topanga.

An additional signal test that was performed consisted of placing the C.P. Topanga switch in the reverse and locked position (for movement into the C.P. Topanga siding) and then initiating a signal request to clear the C.P. Topanga westbound signal into the single main track. This test was performed with the eastbound signal at C.P. Topanga cleared and performed again with the eastbound signal at C.P. Topanga at stop. The HVLC would not act on either command and did not clear the westbound signal.

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[1] The dispatcher can make multiple signal routes by "stacking" signal requests. The dispatcher selects the first route, in this case for the Leesdale Local to proceed from the eastbound Topanga signal into the siding, and then request or stack a second route, in this case for the Metrolink 111 to proceed from the westbound Topanga signal into the single main track. All stacked signal requests from the dispatcher are in a queue in the Digicon system at the Metrolink Operations Center and are acted upon, one at a time, in the order that they are requested. The first route is sent from the Digicon system to the Harmon Vital Logic Controller in the field. When that route is completed, i.e., when the Leesdale Local completes its movement through C.P. Topanga and into the siding, then the next request of signal controls are sent to the equipment in the field in that same order.

[2] The Harmon Vital Logic Controller is a programmable logic controller specifically designed for controlling wayside signal, switch and track circuits.