

A Partnership Including  
Professional Corporations  
600 Thirteenth Street, N.W.  
Washington, D.C. 20005-3096  
202-756-8000  
Facsimile 202-756-8087  
www.mwe.com

Christine M. Gill  
cgill@mwe.com  
(202) 756-8283

Boston  
Chicago  
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## MCDERMOTT, WILL & EMERY

February 11, 2004

### Via Email

Mr. Edmond J. Thomas  
Chief Engineer  
Office of Engineering and Technology  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC 20554

**Re: Southern LINC; 800 MHz Public Safety Interference Proceeding,  
WT 02-55; Ex Parte Presentation**

Dear Mr. Thomas:

This is to follow up on several questions that arose during our meeting on January 27, 2004, concerning the FCC's ongoing proceeding on interference to public safety systems in the 800 MHz band. During that meeting, we described Southern's proposal for accommodation of its system in the 800 MHz band in spectrum that would be designated as commercial, cellularized spectrum but would extend below the 861 MHz line suggested by the "Consensus Plan." As we discussed, Southern does not support rebanding; but it feels strongly that if the Commission proceeds with rebanding, Southern must be accommodated on spectrum of an equal quality and quantity to that of other commercial providers in the band, most prominently Nextel Communications.

- 1. Why would it be more difficult/costly/complicated for Southern's system to be relocated completely above 861 MHz, rather than a band extending primarily below 861 MHz?***

As explained below, if Southern LINC were forced to relocate into spectrum that begins at 861 MHz and goes up, none of Southern's current subscriber units would have enough channels in the 861-866 MHz range programmed into their "bandmap" to supply more than a handful of cell sites in Southern's system with matching control channels. That would mean that every handset within the Southern LINC system would have to be "touched." With a subscriber base of over 270,000 customers, this would be an extremely burdensome and costly exercise.

Also, every frequency within every cell site in the Southern LINC system would likely have to be changed, resulting in the maximum possible retuning cost for the Southern LINC network.

By way of background, programmed into each subscriber unit on the Southern LINC system is a control channel scan list or "bandmap." The bandmap primarily contains frequencies below 861 MHz, although there are a few channels in this group above 861 MHz. The purpose of this bandmap is to allow a subscriber unit access to the Southern LINC network during its power-up phase, which is when a person turns the radio "on" from the "off" state. At least one frequency in the subscriber unit bandmap must match a cell site frequency to allow the access process to work at any given site. Since the length of the power-up phase of the subscriber unit is directly proportional to the number of frequencies in the bandmap, not all of the 600 channels between 851-866 MHz can be included in the bandmap. Even if it were practical to include all six hundred, a carrier normally would only be authorized to transmit on a portion of this number. A subscriber unit's bandmap typically consists of between 100 and 200 channels.

During its power-up phase the subscriber unit scans the bandmap and compares it to all frequencies on which Southern LINC is transmitting in the user's area. When it finds a frequency in the bandmap that has sufficient signal strength, it will request service from the Southern LINC network using that frequency. Assuming it is a valid Southern LINC subscriber unit and all communications from the subscriber unit via the bandmap frequency go well, the subscriber unit will gain access to the Southern LINC system.

Once access to the Southern LINC system is gained, the subscriber unit will continue to monitor the bandmap frequency that allowed it access to the system unless "handed over" to another frequency. This handover can occur in one of two ways. Once the subscriber unit attempts to place or receive a call, the bandmap frequency will assign it to a "traffic-carrying" frequency within the same cell. Handovers can also occur from cell-to-cell in the case of a subscriber unit that is moving from the coverage area of one cell into the coverage area of another cell.

One of the subscriber unit bandmap frequencies is commonly programmed into each cell site in the number one frequency position. This frequency is referred to as the cell site's "control channel." The frequency designated as the cell site's control channel allows subscribers to gain access to the network and also assigns subscriber units to traffic channels (i.e., designated frequencies within the same cell that are *not* used as control channels) so that the subscriber units can make and receive calls.

Since a cell site's control channel is essentially responsible for allowing subscriber unit access and for routing all subscriber unit traffic, every cell site within the system should have a control channel that utilizes a frequency that is also in the bandmap of *all* the subscriber units. If this is not the case, the cell will only be able to accept subscriber traffic that is handed over to it from another cell because it will not be able to authenticate subscriber units onto the system. This results in a cell not having the complete functionality of typical cells and, in the event of non-overlapping coverage (such as in rural areas), in a cell being virtually invisible to subscriber units.

Considering all these factors, it becomes apparent that for maximum system efficiency, all control channels for cell sites must be within the subscriber unit bandmap, and the carrier must have a license to use at least one of the bandmap frequencies at each cell site.

The majority of the frequencies in Southern LINC's subscriber unit bandmap are between 854.7625 and 860.9875 MHz. The spectrum relocation plan that Southern suggested in its filing of February 10, 2003, will maximize the number of current bandmap channels that are present within the spectrum to which Southern would have to be relocated, thereby significantly reducing the number of customer handsets and individual cell sites that would have to be retuned. In contrast, if Southern is forced to move into a spectrum home that begins at 861 MHz and goes up, there would be very few of its existing subscriber bandmap channels in this group of channels, and very few matching control channels at Southern's 500 plus cell sites. That would mean that every handset would have to be touched and frequencies in every cell site within the Southern LINC system would likely have to be changed if Southern were forced to relocate to spectrum above 861 MHz. Placing the entire Southern system above 861 MHz also would impact Nextel directly since there is not enough spectrum above 861 MHz to accommodate both systems.

This massive retuning effort would mean a dramatic increase in the retuning cost for the Southern LINC system alone. If rebanding is adopted, it is likely that Southern LINC will be one of the first entities in its area to retune (it is the largest single system in the 800 MHz band other than Nextel). Migration exclusively above 861 MHz would result in the maximum possible retuning cost for the Southern LINC network *and reduce funds available for other licensees* from the \$850 million relocation fund. Southern believes that this is neither prudent nor necessary to accomplish *any* of the objectives of this docket.

**2. *How high above ground are Southern LINC's antennas in urban and other parts of its service territory?***

The Southern LINC system has over 500 antenna sites throughout a four-state area. As Southern has stated previously, its system is generally comprised of a mix of high and low site antennas.<sup>1</sup>

In the Atlanta metropolitan area, which comprises approximately 20 counties around Atlanta, Southern's minimum antenna height is 70 feet above ground level (AGL), and its average antenna height is approximately 179 feet AGL. Similar figures are reflected in the Birmingham metropolitan area where Southern has a minimum antenna height of 50 feet and an average antenna height of 170 feet. In addition, over 20% of cell sites in the Birmingham metropolitan area have an antenna height of less than 100 feet.

Nextel has attempted in this proceeding to portray Southern's system as architecturally distinct from its own. While it is true that Southern has not experienced the types of interference problems being created by Nextel, both Southern's and Nextel's systems are a combination of

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<sup>1</sup> However, there is no industry or regulatory definition of what constitutes a high or low antenna site.

high and low site antennas. Accordingly, Southern does not believe that there is a rational basis on which to make regulatory distinctions between CMRS competitors based on a notion of “antenna heights” or “cellular architecture.” Certainly the definition of “cellularized” found in the Consensus Plan, i.e., “a system with (1) more than five overlapping, interactive sites featuring hand-off capability and (2) sites with antenna heights of less than 100 feet above ground level on HAATs of less than 500 feet and (3) sites with more than 20 paired frequencies,”<sup>2</sup> would include both Nextel’s and Southern’s systems. Nevertheless, the Consensus Parties seem to imply that, as a regulatory construct, only one entity is likely to meet this definition, and that is Nextel. This is simply not true.

\* \* \* \* \*

Southern reiterates its opposition to rebanding and urges the Commission not to proceed in this direction. If it does, however, it should do so only by treating all participants fairly. The band plan Southern has proposed for its network on a number of occasions in this proceeding, and again herein, would provide the minimum amount of regulatory symmetry to achieve a legally viable result for Southern. The Consensus Plan does not do this and instead significantly advantages one competitor. The Commission cannot lawfully proceed to adopt the Consensus Plan as proposed.

Very truly yours,

*/s/ Christine M. Gill*

Christine M. Gill

#### Attachments

cc: Chairman Michael K. Powell  
Commissioner Kathleen Q. Abernathy  
Commissioner Jonathan S. Adelstein  
Commissioner Michael J. Copps  
Commissioner Kevin J. Martin  
John B. Muleta, Wireless Telecommunications Bureau  
Julius P. Knapp, Office of Engineering and Technology  
Michael J. Wilhelm, Wireless Telecommunications Bureau  
Catherine W. Seidel, Wireless Telecommunications Bureau  
Aaron Goldberger, Wireless Telecommunications Bureau  
Marlene H. Dortch, Secretary

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<sup>2</sup> See Reply Comments of Consensus Parties, at 10.