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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Co-Channel Protection Criteria	)	PR Docket No. 93-60
for Part 90, Subpart S Stations	)	RM-8028
Operating Above 800 MHz	)	

To: The Commission

COMMENTS OF THE SOUTHERN CALIFORNIA EDISON COMPANY

Southern California Edison Company (SCE), by its attorney and pursuant to the Notice of Proposed Rule Making ("Notice") adopted in the above-referenced proceeding, respectfully submits these Comments for consideration by the Federal Communications Commission.1/

I. PRELIMINARY STATEMENT

1. SCE is the second largest electric utility in the United States. Its service area stretches from Los Angeles, east to the Arizona border, and north to the Bridgeport area. Within this 50,000 square mile expanse, SCE serves over 4 million residences, schools, hospitals, businesses, and governmental facilities. In total, SCE provides

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1/ Notice of Proposed Rule Making (FCC 93-140), released April 7, 1993, 8 FCC Rcd 2454 (1993).

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electricity to approximately 9 million people, i.e., to 1 in every 29 people in the nation.

2. To ensure that this essential service is provided safely and efficiently to all these people, businesses, and locations, SCE maintains a large, complex internal telecommunications network. SCE extensively employs the public switched telephone network, private wire and fiber

As the licensee of these significant 800/900 MHz facilities, SCE has a strong interest in the Commission's proposal in this proceeding which would provide applicants and licensees in the non-SMR categories, such as SCE, the same higher level of co-channel interference protection (the 40/22 dBu standard) that the Part 90 - Subpart S rules currently afford to systems operating in the SMR category.

4. SCE likewise has a strong interest in that portion of the Notice's proposal which seeks comment on the issue of whether the Commission's traditional use of the R-6602 propagation prediction methodology is satisfactory for the calculation of co-channel mileage separation standards. The Notice asks whether some other methodology, such as the Longley-Rice/Technote 101 computer prediction model, would be more suitable for 800/900 MHz land mobile propagation predictions and the resulting computation of service contours.

II. COMMENTS

5. SCE has a long record of participation in Commission proceedings, both at the petition for rule making

mobile radio systems in the bands above 800 MHz. Specifically, on August 12, 1992, SCE filed a Statement in Partial Support of NABER's Petition for Rule Making

mobile units and repeater stations with more sensitive receivers than were available when the Commission first made 800/900 MHz assignments available. While this has greatly increased the capability of today's systems, it has also created a need for greater co-channel protection.

7. SCE welcomes the invitation extended by the Commission to comment upon the continued use of R-6602 methodology to calculate the relevant contours. SCE has found that the R-6602 methodology poorly predicts actual propagation in the irregular terrain of Southern California. Consequently, it inadequately protects existing co-channel systems from applicants who seek to "engineer-in" new systems. SCE believes that the so-called Technote 101 methodology, based on the more accurate Longley-Rice RF propagation model, is superior. SCE, therefore, urges the Commission to adopt this more accurate propagation model for calculation of the relevant contours.

8. SCE's practical experience with 800/900 MHz systems in the Los Angeles Basin and the Southern California region demonstrates that the Commission's R-6602 methodology is often extremely inaccurate in predicting actual propagation. The R-6602 methodology is highly generalized (it is essentially a transposition of UHF broadcast

propagation interpreted for land mobile use) and it relies on a "flat earth" model of RF propagation. Specifically, the R-6602 methodology averages the terrain along each radial to determine an average height above average terrain (HAAT), and then models the propagation based on this average HAAT value. Use of this "averaging" methodology often results in extremely smooth, rounded contours, regardless of the actual intervening terrain or environments that may or may not be conducive to RF propagation over long distances. While the R-6602 model may adequately serve the Commission's and applicants' purposes where the terrain is indeed flat, it is wholly inadequate for describing the true service area of systems operating in the irregular terrain of Southern California.

9. SCE believes that use of the Longley-Rice/Technote 101 methodology would more accurately address the Commission's true concern with co-channel protection and spectrum utilization. The Technote 101 model makes use of modern computer capabilities that permit the analysis of digitized terrain data. Today's modern private land mobile systems should be using a modern, readily available computer-capable methodology to help determine co-channel protection criteria rather than continuing to use the inaccurate methodology behind the R-6602 curves.

10. To emphasize the importance of transitioning to the Longley-Rice Technote 101 methodology, SCE respectfully notes that the Commission long ago determined that the R-6602 "flat earth" model is ill-suited to the Los Angeles Basin's unique terrain and operating environment. The R-6602 analysis that suggests 20-mile/40 dbu contours with 70-mile co-channel separation does not provide the quality of service expected in all instances, as demonstrated by the Commission's adoption of 105-mile co-channel separation for certain peaks in Southern California. The four protected peaks are among the highest antenna sites in the country and the rapidly varying terrain presents unusual propagation characteristics which the R-6602 curves could never accurately model.[3/]

11. Further, SCE notes that the R-6602 methodology only works with HAAT's not exceeding 5,000 feet. However, heights as much as 10,000 feet may be found on the perimeter

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3/ Later, in response to a number of petitions for rulemaking, the Commission implemented the so-called "knock-out" list for peaks surrounding the perimeter of the

of the Los Angeles Basin and throughout the western United States. In the days before digitized terrain data was available along with associated computer capabilities, use of the R-6602 methodology was a necessary expedient. Current computer capabilities, and the availability of digitized terrain data, suggest that the time has come to transition to Technote 101 to obtain more accurate management and use of the spectrum resource, especially where there are intervening terrain features.

12. Accordingly, SCE suggests that should the Commission be determined to continue employing R-6602 methodology, that it should first differentiate the terrain of the United States. In this manner, in those areas of the country where flat-earth models are appropriate, licensees and applicants could continue to have the option of using R-6602 curves. However, in areas of complex terrain, the Commission should require the use of the more complex, yet more reliable, Technote 101 methodology. If, however, the Commission is determined that only <u>one</u> standard be employed, SCE urges that the Commission mandate use of the Technote 101 methodology for all regions.

13. SCE possesses, as do the majority of licensees in the 800/900 MHz Industrial/Land Transportation category,

extensive critical transmission and distribution systems. The infrastructure necessary to construct and operate these systems require a significant investment of company capital. The Commission's continued reliance upon a propagation model that is patently inapplicable to many areas of the country, such as the R-6602 methodology, jeopardizes the operation of these critical systems and their underlying investment. SCE believes that in addition to adopting, as proposed, the more stringent 40/22 dBu co-channel separation standard that recognizes the interference protection requirements of today's systems, the Commission should seize the opportunity to now implement a more realistic method of determining when that co-channel separation standard has been met.

WHEREFORE, THE PREMISES CONSIDERED, the Southern California Edison Company hereby respectfully submits the foregoing Comments and urges that the Federal Communications Commission act in a manner fully responsive to the recommendations therein.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

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