

## APPLICATION FOR CONVENTIONAL EXPERIMENTAL LICENSE

Pursuant to Section 5.54(a)(1) of the Commission’s rules, Southern California Gas Company (“SCG”) hereby requests grant of a conventional experimental license (“CEL”) to test and evaluate the performance of its advanced meter system (“AMS”) technology used to enable two-way transmission of meter data over a secured network.<sup>1</sup> Authorization is sought for a two (2) year period, beginning August 1, 2020. SCG seeks to build and test an AMS for a prolonged period of time to ensure its reliability and thus a CEL is the appropriate regulatory vehicle for this request.

### I. Introduction

SCG is a critical infrastructure company and the largest natural gas distribution company in the U.S. SCG provides natural gas service to more than 20 million customers across 20,000 square miles throughout central and southern California. SCG – like its sister company, San Diego Gas & Electric – is a wholly-owned subsidiary of Sempra Energy, a natural gas utilities holding company that indirectly serves more than 40 million customers nationwide. As a natural gas distribution company, SCG is directly regulated by the California Public Utilities Commission.



### II. Research and Experimentation Program

SCG is in the beginning stages of evaluating its vendor’s next generation Data Collection Unit (“DCU”). Presently, SCG uses vendor technology to read meters and report pressure changes in its distribution pipeline system. However, the existing system is not able to differentiate meter reads from pressure changes in our electronic pressure monitors. SCG’s vendor has introduced data prioritization features to ensure critical data, such as changes in pipeline pressure, is at the front of the data transmission queue. This feature will greatly enhance the system’s capabilities, but requires testing to ensure correct and timely transmission of data. The DCU antenna options SCG will be testing are shown in Attachment A.

Another new enhancement that will be tested is DCU to DCU wireless security improvements. The type of data that SCG desires to transmit, pressure changes in its distribution pipeline system, are very sensitive and could be subject to foreign/external tampering. An enhanced security system that allows for wireless transmission of meter reading data is required

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<sup>1</sup> 47 C.F.R. § 5.54(a)(1).

to prevent unlawful tampering of SCG's data as well as to ensure that SCG's pipeline distribution system continues to operate without incident. Lastly, SCG will be testing new power board enhancements for more efficient solar battery charging.

In order to evaluate these new features, SCG will need to construct two experimental lab environments. One will be an indoor lab located in Monterey Park, California and one will be an outdoor lab located in Pico Rivera, California (See Attachment B). SCG is also providing evidence that its testing will not cause interference to any other licensees in Attachment C. A layout of each of the testing facilities and antennas is provided in Attachment D.

### **III. Objectives to be Accomplished**

SCG's testing of its next generation DCU will include an end-to-end DCU-to-edge device test in Pico Rivera. This evaluation will validate data prioritization of meter reads versus pipeline pressure changes utilizing the dual transceiver capability. DCUs with solar panels and the new power boards will also be evaluated here to ensure power charging cycles are optimal. SCG hopes this testing results in longer battery longevity. The Pico Rivera testing lab will also be used to validate that the new security features are performing as indicated by vendor in order to accomplish the goals described above.

The Monterey Park indoor test environment will be utilized for all regression testing and firmware validation as well as an additional security enhancement test.

### **IV. Contributing to Utilization and Development of AMS Technology**

SCG's testing of the AMS will result in information security enhancements and performance enhancements for more effective meter reading and gas pipeline pressure monitoring. Validation of AMS technology will provide additional security that meters and pressure monitors do not currently have. Currently, meter reading and pressure monitors are only a one-way data encryption in the proprietary data network. AMS technology will ensure that data encryption will occur using two-way wireless transmission, thus greatly enhancing wireless data transmission security for critical infrastructure licensees such as SCG.

### **V. Contact Information**

For any questions regarding this application, please contact:

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**VI. Conclusion**

For the reasons stated above, SCG respectfully requests the Commission grant the CEL by August 1, 2020 for two (2) years in order to facilitate the testing and development of its AMS and improve the reliability of its pipeline distribution network.

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**ATTACHMENT A**

## DCU Antenna Options

5 dBi (EM-Wave)	7 dBi (Laird)
	
<ul style="list-style-type: none"><li>• Same antenna used for STAR DCU2</li><li>• Used for dense areas or to make installation less visible</li></ul>	<ul style="list-style-type: none"><li>• Same size as antenna used for SRFN DCU2</li><li>• Used for rural areas or to extend coverage (potential to reduce DCU count)</li></ul>

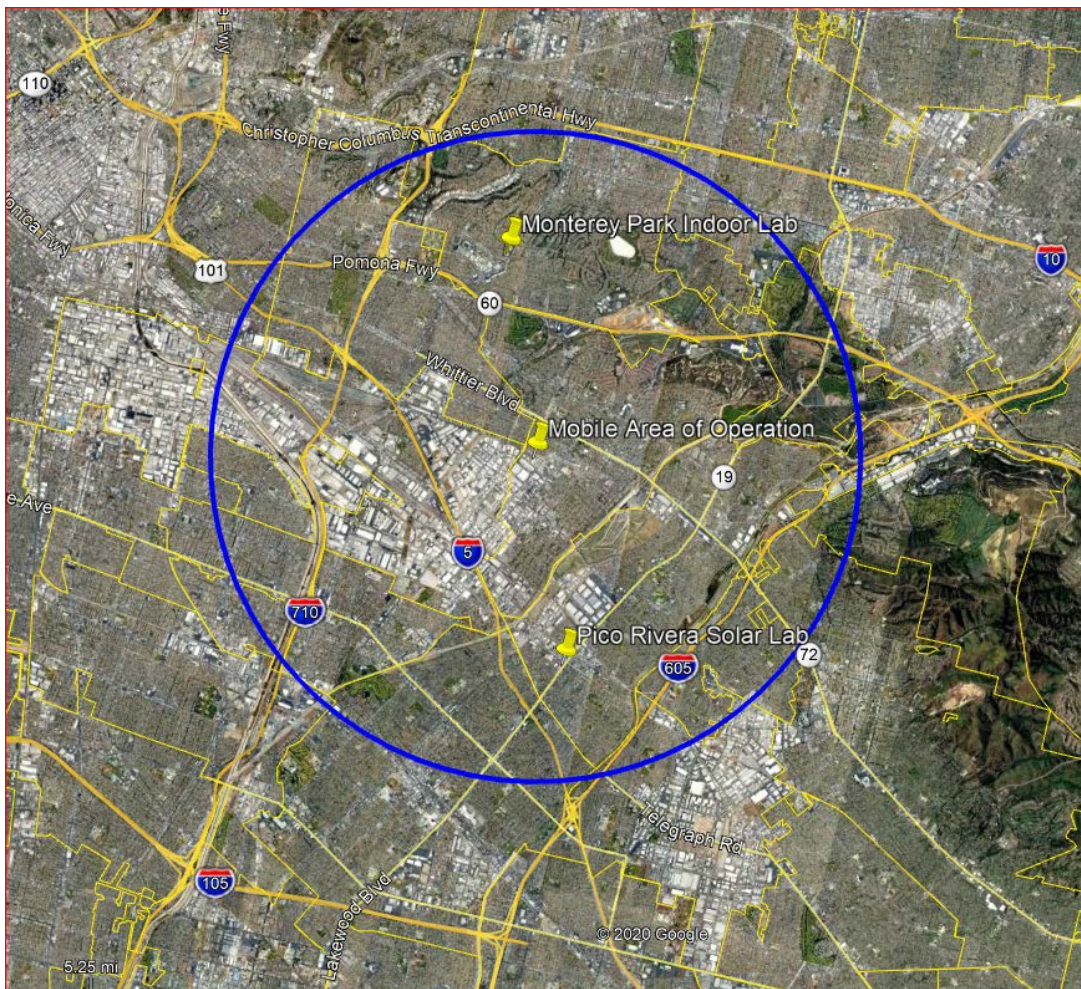
## ATTACHMENT B

### Antenna Node Locations and Area of Operation

1. Monterey Park, Indoor Lab  
1801 S Atlantic Blvd  
Monterey Park, CA
2. Pico Rivera Solar Lab  
8101 Rosemead Blvd  
Pico Rivera, CA

#### Area of Operation

Operating within 7.0 km radius around 34-20-84, 118-07-70



**ATTACHMENT C**

**No Interference**

**Search Results for 462.4375 in (Los Angeles)**

Freq Out	Freq In	Tone	Callsign	Description	Category	Agency/County	State
462.43750	467.43750	CC 5 TG 5 SL 1	WQAP774	Engineering	Sheraton Gateway LAX Hotels	Hotels Los Angeles	CA
462.43750	467.43750	CC 9 TG 15 SL 1		Event Services	Los Angeles Convention Center Attractions & Amusement Parks	Attractions & Amusement Parks Los Angeles	CA
462.43750	467.43750	CC 9 TG 16 SL 2		Event Services	Los Angeles Convention Center Attractions & Amusement Parks	Attractions & Amusement Parks Los Angeles	CA
462.43750	467.43750	CC 5 TG 5 SL 2	WQAP774	Housekeeping	Sheraton Gateway LAX Hotels	Hotels Los Angeles	CA
462.43750		263 DPL	WQDZ840	Housekeeping	Hotel Oceana - Santa Monica Hotels	Hotels Los Angeles	CA
462.43750		263 DPL	WQDZ840	Housekeeping	Oceana Santa Monica Hotels	Hotels Los Angeles	CA
462.43750		203.5 PL		BARTON	Anaheim City School District School Districts	Schools Orange	CA
462.43750		203.5 PL		EDISON	Anaheim City School District School Districts	Schools Orange	CA
462.43750		203.5 PL		FRANKLIN	Anaheim City School District School Districts	Schools Orange	CA
462.43750		218.1 PL		GAUER	Anaheim City School District School Districts	Schools Orange	CA
462.43750		210.7 PL		GUINN	Anaheim City School District School Districts	Schools Orange	CA
462.43750		210.7 PL		HENRY	Anaheim City School District School Districts	Schools Orange	CA
462.43750		203.5 PL		KEY	Anaheim City School District School Districts	Schools Orange	CA
462.43750		210.7 PL		LINCOLN	Anaheim City School District School Districts	Schools Orange	CA
462.43750		203.5 PL		MARSHALL	Anaheim City School District School Districts	Schools Orange	CA
462.43750		210.7 PL		ORANGE	Anaheim City School District School Districts	Schools Orange	CA
462.43750		218.1 PL		PRICE	Anaheim City School District School Districts	Schools Orange	CA
462.43750		218.1 PL		ROOSEVELT	Anaheim City School District School Districts	Schools Orange	CA
462.43750		218.1 PL		STODDARD	Anaheim City School District School Districts	Schools Orange	CA
462.43750		218.1 PL		SUNKIST	Anaheim City School District School Districts	Schools Orange	CA

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462.43750	467.43750	CC 5 TG 5 SL 1	WQAP774	Engineering	Sheraton Gateway LAX Hotels	Hotels Los Angeles	CA
462.43750	467.43750	CC 9 TG 15 SL 1		Event Services	Los Angeles Convention Center Attractions & Amusement Parks	Attractions & Amusement Parks Los Angeles	CA
462.43750	467.43750	CC 9 TG 16 SL 2		Event Services	Los Angeles Convention Center Attractions & Amusement Parks	Attractions & Amusement Parks Los Angeles	CA
462.43750	467.43750	CC 5 TG 5 SL 2	WQAP774	Housekeeping	Sheraton Gateway LAX Hotels	Hotels Los Angeles	CA
467.43750		233.6 PL		JEFFERSON	Anaheim City School District School Districts	Schools Orange	CA
467.43750		225.7 PL		JUAREZ	Anaheim City School District School Districts	Schools Orange	CA
467.43750		233.6 PL		LOARA	Anaheim City School District School Districts	Schools Orange	CA
467.43750		233.6 PL		MADISON	Anaheim City School District School Districts	Schools Orange	CA
467.43750		233.6 PL		MANN	Anaheim City School District School Districts	Schools Orange	CA
467.43750		225.7 PL		OLIVE	Anaheim City School District School Districts	Schools Orange	CA
467.43750		225.7 PL		PALM LANE	Anaheim City School District School Districts	Schools Orange	CA
467.43750		233.6 PL		REVERE	Anaheim City School District School Districts	Schools Orange	CA
467.43750		225.7 PL		ROSS	Anaheim City School District School Districts	Schools Orange	CA
467.43750		225.7 PL		WESTMONT	Anaheim City School District School Districts	Schools Orange	CA

### ATTACHMENT D

#### Monterey Park indoor Lab layout

Rack mounted DCU with Omni-directional antennas



#### Pico Rivera Outdoor Lab

