

Public Utilities Commission
State of California

November 4, 1983

File No. 112-D

Materials Transportation Bureau
Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Attention: Dr. Robert L. Paullin, P.E.
Associate Director for Office of Operations & Enforcement

Gentlemen:

Transmitted herewith is this Commission's Decision 83-11-017, dated November 2, 1983, in Application 83-02-59, which authorizes a deviation for San Diego Gas & Electric Company from the provisions of 49 CFR Sections 193.2507, 193.2819, 193.2821, 193.2911, 193.2913, and 193.2915. The exemption granted is conditioned on the concurrence of the Secretary of the United States, Department of Transportation and the installation of unmonitored low voltage flame and flammable gas detection equipment connected to an automatic shutoff system with a battery-powered backup.

It is our understanding that your concurrence on this deviation becomes effective 60 days after notification absent further action by your agency.

If there are any questions on any of the enclosed material, please contact this office at (415) 557-3109.

Very truly yours,

(signed)
JOSEPH E. BODOVITZ
Executive Director

Attachment

cc: San Diego Gas & Electric Company
Jack C. Overly, Chief, Western Region Pipeline Safety, Office of
Operations & Enforcement, Materials Transportation Bureau

Public Utilities Commission
State of California

July 23, 1984

File No. A.83-02-59

U.S. Department of Transportation
Research and Special Programs Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

Attention: Mr. Richard L. Beam, Associate Director for
Pipeline Safety Regulation

Gentlemen:

On February 25, 1983, San Diego Gas & Electric Company filed with the California Public Utilities Commission an application for waivers from certain provisions of 49 CFR, specifically Sections 193.2507, 193.2819, 193.2821, 193.2911, 193.2913 and 193.2915 (see Attachment 1). On November 4, 1983, the California Public Utilities Commission (CPUC) transmitted to the Department of Transportation (DOT), Material Transportation Bureau, a CPUC decision authorizing San Diego Gas & Electric Company (SDG&E) such waivers (see Attachment 2).

In a letter dated January 13, 1984, Richard L. Beam, Associate Director for Pipeline Safety Regulation, objected to the granting of certain requested waivers thereby staying the CPUC authorization for said waivers (see Attachment 3).

In his letter, Mr. Beam stated that your policy is to approve State waivers upon "an adequate showing that compliance with a safety standard is somehow inappropriate due to unusual circumstances", and a demonstration that "compensatory factors make compliance unnecessary". The CPUC herein makes such additional showing and demonstration, based upon unusual circumstances which were not fully discussed in the CPUC decision, and therefore could not be considered by Mr. Beam in his assessment.

CPUC staff has met with representatives of SDG&E to discuss requirements of 49 CFR Part 193 relative to the Borrego LNG Facility. As a result of these discussions, SDG&E no longer needs waivers from 49 CFR, Sections 193.2507; 193.2911; 193.2913; 193.2915; 193.2819(a), (c), (d), (e), (f); and 193.2821(a); for the following reasons:

193.2507 - Monitoring Operations

SDG&E presently complies with the requirements of this section. SDG&E's operating procedures for the Borrego LNG Facility specify regular inspection intervals for the detection of fire, malfunction, or flammable fluid which could cause a hazardous condition.

193.2911 - Security Lighting

SDG&E has agreed to install the facilities necessary to satisfy the illumination requirements of this section.

193.2913 - Security Monitoring

SDG&E presently complies with the requirements of this section. SDG&E's security procedures for the Borrego LNG Facility specify a schedule of visual observation for the presence of unauthorized persons.

193.2915 - Alternative Power Sources

SDG&E has agreed to provide an alternative source of power as required by this section.

193.2819(a) (c) (d) (e) (f) - Gas Detection

SDG&E has agreed to install and make available equipment to continuously monitor for the presence of flammable gases and vapors in accordance with the requirements of this section, except paragraph (b).

193.2821(a) - Fire Detection

SDG&E has agreed to install equipment to continuously monitor for the presence of either flame, heat or products of combustion in accordance with the requirements of this section, except paragraph (b).

SDG&E continues to seek waivers from portions of Section 193.2819, paragraph (b) and Section 193.2821, paragraph (b). The following information demonstrates that several unusual circumstances exist at the Borrego

LNG Facility which make compliance with these sections inappropriate, and that compensatory factors make compliance unnecessary.

The Borrego LNG Facility is unusual because it is extremely small in physical size, in storage and vaporizing capacity, and in the number of customers served. We believe it to be one of the smallest LNG facilities in the country. The tank and all ancillary equipment is contained within a berm measuring 50 feet x 50 feet. The maximum tank capacity is 7,750 gallons. The facility serves a relatively remote on-site managed mobile home park with approximately 300 customers, most of whom are present only during winter months. Typical levels of gas consumption are 80 MCF/D in winter and 10 MCF/D in summer. In addition, SDG&E has closed their rate schedule in the Borrego area preventing new customers from being added to the system.

The Borrego LNG Facility is unusual because it is totally self-powered. It operates without electric power for vaporization using only ambient heat.

The Borrego LNG Facility is unusual because it is remote from local residents and extremely remote from SDG&E's Control Center. The nearest habitable structure is approximately 1,000 feet from the facility. SDG&E's Control Center is located in San Diego, California, separated from the Borrego LNG Facility by approximately 100 miles of rough, undeveloped desert terrain.

SDG&E has agreed to install audible alarms in the areas of gas and fire detection as required by 193.2819(b) and 193.2821(b). In addition, SDG&E has agreed to connect gas and fire detection equipment, required under Sections 193.2819 and 193.2821, to the existing emergency shutdown system. Waiver of the requirements for alarms in an attended control room is requested due to the remoteness of the facility from SDG&E's Control Center, and the compensation provided by the automatic emergency shutdown capability.

The Borrego LNG Facility is an unmanned operation; therefore, no control room exists at the facility. The nearest attended control room, as indicated above, is located approximately 100 miles from the Borrego facility. Due to this considerable distance, plus high winds and extreme temperatures, transmission of alarm signals over this distance by telephone line telemetry would be subject to line noise, false signals, and interruption of service. The result would be a lack of operator confidence in the data received at the Control Center. In addition, the response time from SDG&E's Control Center to the Borrego LNG Facility is approximately two hours. This long response time precludes effective emergency response originating from the Control Center.

Audible alarms in the areas of gas and fire detection will be able to be heard by persons on the premises and will adequately warn persons in the vicinity of the facility of the presence of potential hazards. In addition, park management personnel will be thoroughly briefed on appropriate response to alarm actuation. Simultaneously, the existing automatic emergency shutdown system will isolate the LNG storage tank and safely blow down the facility. The connection of the existing emergency shutdown system to the required gas and fire detection equipment more than compensates for an alarm at an attended control room, especially one separated from the facility by two hours of travel time. In addition, following a shutdown of the Borrego Facility, SDG&E is notified by park personnel of customer gas outages and SDG&E responds by dispatching a crew to the facility.

Because DOT guidelines for approval of State waivers are basically unknown to those outside the employ of DOT, the CPUC's original transmittal to DOT was evaluated in a manner which we consider to be unreasonable. The CPUC staff has visited the Borrego LNG Facility, assessed local conditions and potential hazards, and is in full support of the above request. We believe the unusual circumstances presented by this unique facility are deserving of your reconsideration. Please inform me of how we may best proceed to resolve this matter.

Very truly yours,

(signed)
JOSEPH E. BODOVITZ
Executive Director

Attachments

Public Utilities Commission
State of California

April 30, 1985

File No. A.83-02-59
420/31

U.S. Department of Transportation
Research and Special Programs Administration
400 Seventh Street, S.W.
Washington D.C. 20590

Attention: Richard L. Beam
Associate Director for Pipeline Safety Regulation

Gentlemen:

The attached letter, dated April 18, 1985, has been sent to San Diego Gas and Electric Company (SDG&E). It concerns the waiver granted by this Commission to SDG&E with regard to certain requirements for the Borrego Springs LNG facility. With the letter, disposition of all outstanding items related to the plant has been accomplished.

We wish to thank you for your evaluation and review of the plant data and this Commission's decision.

Very truly yours,

(signed)

JOHN E. JOHNSON, CHIEF
Service and Safety Branch

Attachment

cc: SDG&E

Attachment to the incoming letter dated 11/04/83

Decision 83-11-017 November 2, 1983

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Petition of)
SAN DIEGO GAS & ELECTRIC COMPANY)
for exemption from certain state and)
federal liquefied natural gas safety)
requirements with respect to the)
Borrego LNG satellite facility.)
_____)

Application 83-02-59
(Filed February 25, 1983)

O P I N I O N

By this application San Diego Gas & Electric Company (SDG&E) requests exemption from certain state and federal safety requirements for its Borrego Springs (Borrego) liquefied natural gas (LNG) satellite facility located at Borrego Springs, about 90 miles northeast of San Diego.

The Borrego facility is a small, unmanned LNG storage and vaporizing facility serving approximately 300 customers in a mobilehome park in Borrego Springs. It was built in 1968 at an original cost of about \$50,000. The facility consists of a 7,750-gallon tank, five ambient air vaporizers, and associated piping and control equipment. It is simple by design, using no pumps, compressors, or other complex machinery. It has no electrical or combustion equipment (which could ignite a gas leak), contains few moving parts and has a minimum of potential leak sources. All equipment is contained within a 30x30 diked area except a regulator standing outside. LNG is delivered by truck, about twice a week in winter and less often in summer, from SDG&E's Chula Vista LNG plant. It is vaporized as needed by the heat of the ambient air. In its 14 years of operation the facility has never experienced a gas fire, a significant gas leak, a significant LNG leak or spill, any personal injury, safety or security-related incident.

LNG safety regulations are contained in Part 193 of Title 49 of CFR and National Fire Protection Association Standard 59A, 1975 Edition (NFPA 59A).

SDG&E seeks exemption from sections 520 and 2116 of National Fire Protection Association standard (NFPA) 59A and from 193.2407, 193.2409, 193.2439, 193.2441, 193.2507, 193.2819, 193.2821, 193.2911, 193.2913, and 193.2915 of Title 49 of the Code of Federal Regulations (CFR). SDG&E states that the requirements imposed on the Borrego facility by the regulations are unnecessary, too costly, or counterproductive. It estimates the total cost of the required changes to be \$225,000 which is four times the facility's original cost.

The federal regulations were promulgated by the United States Secretary of Transportation (Secretary) pursuant to the Natural Gas Pipeline Safety Act (49 U.S.C. section 1671 et seq.). By agreement with the Secretary the Commission oversees compliance with federal gas safety standards for LNG within California. The Commission may waive compliance with any standard, in whole or in part, provided the Commission gives the Secretary written notice at least 60 days prior to the effective date of the waiver and further provided that the Secretary fails to object before the waiver's effective date.

NFPA 59A is imposed on the Borrego facility by the Commission's General Order (GO) 112-D. Sections 192.12 and 193.3(e) of GO 112-D exempts all LNG facilities from the imposed safety standards except compliance with NFPA 59A. Section 102 of NFPA 59A (1975) exempts facilities constructed in accordance with earlier editions.

Because the Borrego facility was constructed in compliance with the 1967 edition of NFPA 59A, which did not require individual inlet and outlet valves for each vaporizer or automatic sump

pumps to remove rainwater from the impoundment area, sections 520 and 2116 are not applicable to the Borrego facility.

The Commission staff made a thorough examination of the Borrego facilities. The results of the examination with the staff's recommendations were forwarded to SDG&E by letter dated June 27, 1983, a copy of which was placed in the formal file. The staff concluded that the application should be granted conditioned on concurrence of the Secretary and SDG&E's installation of unmonitored low-voltage flame and flammable gas detection equipment connected to an automatic shutoff system with a battery-powered backup. SDG&E accepted the staff recommendations.

The staff review shows that the Borrego facility incorporates an automatic shutoff system for overpressure or underpressure linked to manual emergency trips at the gate and that leak and fire detection equipment could cut LNG flow if connected to the existing shutoff system. It was determined that a facility as small as Borrego does not require portable gas detection equipment in addition to a fixed gas detection system. Also, on-site alarms for fires or leaks should not be required with an automatic emergency shutoff system since there are no on-site personnel except during fill operations. Staff observed that there is no visible activity on the site during normal operations. Thus, with no visible activity, monitoring from Chula Vista would not be an efficient use of trained personnel since the only useful action to take would be to shut down the tank. In addition on-site monitoring for security would be extremely costly for any benefit derived. Finally, since it was determined that security monitoring is not required, staff concludes that neither should there be security lighting or an alternative power source.

Findings of Fact

1. SDG&E seeks exemption from certain state and federal safety requirements for its Borrego LNG satellite facility.
2. The Borrego facility is a small LNG storage and vaporizing facility serving approximately 300 customers in a mobile home park.
3. The facility is simple by design using no pumps or compressors or other complex machinery. It has no electrical or combustion equipment (which could ignite a gas leak), contains few moving parts and a minimum of potential leak sources.
4. Gas is vaporized as needed by heat of the ambient air.
5. In 14 years of operation the facility has never experienced a gas fire, a significant gas leak, a significant LNG leak or spill, or any personal injury related to safety or security.
6. LNG safety regulations are contained in Part 93 in 49 Code of Federal Regulations (CFR) and National Fire Protection 59A, 1975 Edition (NFPA 59A).
7. Federal regulations were promulgated by the United States Secretary of Transportation (Secretary) pursuant to the Natural Gas Pipeline Safety Act.
8. By agreement with the Secretary the Commission oversees compliance with federal safety standards for LNG within California.

9. The Commission may waive compliance with any standard in whole or in part, by giving the Secretary written notice at least 60 days prior to the effective date of the waiver and provided the Secretary fails to object before the waiver's effective date.

10. The Borrego facility was constructed in compliance with the 1967 Edition of NFPA 59A which did not require individual inlet or outlet valves for each vaporizer or automatic sump pump.

11. The Borrego facility is equipped with an automatic shutoff system for overpressure linked to manual emergency trips at the gate. Added leak and fire detection equipment could cut LNG flow if connected to the existing shutoff system.

12. On-site alarms for fire or leaks are not required with an automatic emergency shutoff system.

13. With no visible activity, monitoring from Chula Vista would not be an efficient use of trained personnel. On-site monitoring would be extremely costly for the benefit derived.

14. SDG&E should install unmonitored low voltage flame and flammable gas detection equipment connected to an automatic shutoff system with a battery-powered backup.

Conclusion of Law

The application should be granted to the extent set forth in the following order.

O R D E R

IT IS ORDERED that:

1. San Diego Gas & Electric Company is granted an exemption from the provisions of 49 CFR sections 193.2507, 193.2819, 193.2821, 193.2911, 193.2913, and 193.2915. The exemption becomes effective 60 days from today and is granted conditioned on the concurrence of the Secretary of the United States Department of Transportation and the installation of unmonitored low voltage flame and flammable gas detection equipment connected to an automatic shutoff system with a battery-powered backup.

2. The Executive Director shall notify United States Department of Transportation, Pipeline Safety Enforcement Division of the exemption granted by this decision.

This order is effective today.

Dated November 2, 1983, at San Francisco, California.

LEONARD M. GRIMES, JR.

President

VICTOR CALVO

PRISCILLA C. GREW

WILLIAM T. BAGLEY

Commissioners

Commissioner Donald Vial, being necessarily absent, did not participate.

*Attachment 1 to the incoming letter dated 07/23/84
(Attachment 2 is the incoming letter dated 11/04/83)
(Attachment 3 is the letter dated 01/13/84
under the "Outgoing Text" section)*

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

In the Matter of the Petition of)
SAN DIEGO GAS & ELECTRIC COMPANY)
for Exemption from Certain State)
and Federal Liquefied Natural Gas)
Safety Requirements with Respect to)
the Borrego LNG Satellite Facility)

No. A83-02-59
Filed: February 25, 1983
San Francisco, CA 94102

TO THE HONORABLE, THE PUBLIC UTILITIES
COMMISSION OF THE STATE OF CALIFORNIA:

SAN DIEGO GAS & ELECTRIC COMPANY ("SDG&E") requests the Public Utilities Commission of the State of California ("Commission") to exempt SDG&E from certain state and federal safety requirements otherwise applicable to SDG&E's liquefied natural gas ("LNG") satellite facility located at Borrego Springs, California.

I

STATUTORY AND PROCEDURAL FRAMEWORK

A.

The regulations from which exemption is sought are contained in 49 Code of Federal Regulations ("CFR") part 193 and National Fire Protection Association standard 59A, 1975 Edition ("NFPA 59A").

B.

The federal regulations were promulgated by the Secretary of Transportation pursuant to the Natural Gas Pipeline Safety Act (49 U.S.C. section 1671 et seq.). The Commission and the Secretary of Transportation have agreed that the Commission will monitor compliance with the federal safety standards pursuant to 49 U.S.C. section 1674 (b). 49 U.S.C. section 1671 (d) authorizes the Commission to waive in whole or in part compliance with any standard established under the act provided the

Commission gives the Secretary written notice at least 60 days prior to the effective date of the waiver and further provided that the Secretary fails to object before the effective date.

C.

NFPA 59A, 1975 edition, is imposed on the Borrego facility by the Commission's General Order 112-D, section 193.3(e), which generally exempts facilities of this size from the General Order while requiring compliance with NFPA 59A.

II

DESCRIPTION OF FACILITY

A.

The Borrego facility is a small, unmanned LNG storage and vaporizing facility which serves a mobile home park containing approximately 300 customers in Borrego Springs, California, approximately 90 miles northeast of San Diego. The facility consists of a 7,750-gallon tank, five ambient air vaporizers and associated piping and control equipment. It is extremely simple by design, using no pumps, compressors or other complex machinery. It has no electrical or combustion equipment (which could ignite a gas leak), and it contains very few moving parts and a minimum of potential leak sources. The LNG is delivered by truck from Chula Vista, California for storage at this facility, where it is vaporized, as needed, by the heat of the ambient air. The facility was built in 1968 at an original cost of about \$50,000.00

B.

The type of facility situated at Borrego is considered in the natural gas industry to be a traditional, dependable and cost effective means of supplying gas service to remote areas.

C.

Records encompassing 14 years of operating history indicate that the Borrego facility has never experienced a gas fire, a significant gas leak, a significant LNG leak or spill, or any personal injury, safety-related or security-related incident.

III

PARTICULAR EXEMPTIONS SOUGHT

SDG&E seeks exemption with respect to the Borrego LNG facility from the specific requirements listed below which are otherwise mandated by federal and state law. In each instance,

SDG&E contends that the law as applied to the Borrego facility is unnecessary, too costly, or counterproductive of the purpose sought to be achieved. SDG&E estimates that the total cost to make these changes would approach \$225,000.00, or four times the original cost of the facility.

A.

Requirement: Imposed by 49 CFR 193.2407 and 193.2409; each vaporizer is to be equipped with two inlet shutoff valves, one outlet shutoff valve and a relief valve between the inlet and shutoff valves.

Reason for Exemption: The facility's manifolded vaporizers are equipped with a single inlet and outlet shutoff valve. Compliance will require installation of 15 additional shutoff valves and 10 additional relief valves. Redundant valving of this kind is generally reserved for high pressure and fired vaporizing systems and is not considered necessary for low pressure ambient heated applications such as Borrego. Finally, the number of valves should be minimized since each provides an additional potential source of leakage.

B.

Requirement: Imposed by 49 CFR 193.2439; the facility is to be equipped with an emergency shutdown control system.

Reason for Exemption: An emergency shutdown control system depends upon automatic gas and fire detection devices. The dependability of these devices is questionable based upon SDG&E's experience at its larger LNG facility in Chula Vista, California where false signals from this type of equipment are common. Borrego's desert environment may exacerbate this type of problem with these electronic components. False signals at Borrego will cause unnecessary shutdowns with the attendant expense, depriving 300 customers of gas service for several hours at a time until servicemen arrive from San Diego, and requiring the relighting of each customer's pilot lights.

C.

Requirement: Imposed by 49 CFR 193.2441 and 193.2507; the facility is to be monitored at a manned control center.

Reason for Exemption: Manned control centers require trained LNG operators. The nearest location having full-time trained operators is San Diego. The distance involved will require transmission of monitored data over leased telephone lines, the dependability of which is questionable. Further, the minimum response time from San Diego, about two hours, renders marginal any benefit from manned location monitoring.

D.

Requirement: Imposed by 49 CFR 193.2819 and 193.2821; the facility is to be equipped with automatic gas and fire detection equipment which must be monitored at an attended location.

Reason for Exemption: As in paragraphs B and C, above, the susceptibility of detection equipment to false alarms and the delayed ability to verify due to distance make this requirement an impractical operating aid. Coupled with the fact that local fire-fighting forces consist solely of volunteer personnel, the benefit of these devices will be marginal.

E.

Requirement: Imposed by 49 CFR 193.2911 and 193.2913; security-related lighting is to be installed, and the site monitored.

Reason for Exemption: Full compliance will require a full-time guard force, closed-circuit television or some other security equipment monitored in San Diego. Such a high level of security monitoring for this remote, non-critical facility is unnecessary. There is little risk associated with this facility and its security record is good.

F.

Requirement: Imposed by 49 CFR 193.2915; a backup electrical power system is to be installed for security monitoring systems.

Reason for Exemption: The Borrego facility currently is not served with electrical power. To comply will require bringing utility power lines to the site with provision for independent generator or battery backup. Since little safety purpose will be achieved as shown above, the real effect of this requirement will be to increase the risk of ignition should a gas leak occur.

G.

Requirement: Imposed by section 520 of NFPA 59A; each vaporizer should be equipped with inlet and outlet shutoff valves.

Reason for Exemption: the facility contains five vaporizers, grouped into sets of two and three, with an inlet and outlet shutoff valve for each set. This arrangement provides adequate shutoff capability without the additional potential sources of leakage discussed in A, above.

H.

Requirement: Imposed by section 2116 of NFPA 59A; rainwater must be removed from the facility by an automatically controlled sump pump which will shut off if exposed to LNG.

Reason for Exemption: Compliance will require control equipment and a specially encased pump motor suitable for use in a gas facility. Also required will be electric power. Since the facility is unpaved, the small amount of rain which falls in this desert environment soaks rapidly into the

sandy soil. Natural rainwater handling has proved adequate during the past 14 years of operation making unnecessary the required rainwater removal equipment.

IV

CORPORATE INFORMATION

A.

SDG&E is a public utility corporation organized and existing under and by virtue of the laws of the State of California, and is engaged principally in the business of generating and distributing electric energy in portions of San Diego, Orange and Imperial Counties, California, purchasing and distributing natural gas in portions of San Diego County, and producing and distributing steam in a portion of the City of San Diego.

B.

SDG&E's principal place of business is located at 101 Ash Street, San Diego, California, and its mailing address is Post Office Box 1831, San Diego, California 92112. Petitioner's attorney in this matter is Barton M. Myerson whose address is the same as that shown above and whose telephone number is (619) 235-7834.

C.

SDG&E requests that all communications in this matter be addressed to its attorney and to:

Ralph L. Meyer
Vice President-Regulatory Services
Post Office Box 1831
San Diego, California 92112
(619) 232-4252

D.

A certified copy of SDG&E's Restated Articles of Incorporation, filed with this Commission on February 7, 1974, in connection with Application No. 54636, is incorporated herein by reference. A certified copy of Petitioner's Certificate of Amendment to these Restated Articles of Incorporation was filed with this Commission on August 4, 1977, in connection with Application No. 57497, and is incorporated herein by reference.

WHEREFORE, Petitioner respectfully prays that the Commission issue an Order herein, ex parte:

1. Finding that no significant hazard to the public or the environment exists from the continued operation of SDG&E's Borrego LNG facility as it is presently designed and operating;
2. Exempting SDG&E's Borrego LNG facility from the modifications required pursuant to the federal and state safety standards identified, and from any other parallel or similar provisions; and
3. Granting such additional relief as may be appropriate under the circumstances.

Dated: 2-23-83

SAN DIEGO GAS & ELECTRIC COMPANY

By: (signature)
Ralph L. Meyer
Vice President-Regulatory Services

BARTON M. MYERSON

(signature)
Attorney for Petitioner
Post Office Box 1831
San Diego, California 92112
(619) 235-7834

VERIFICATION

I, RALPH L. MEYER, am an officer, to wit, Vice President-Regulatory Services, of San Diego Gas & Electric Company, the Petitioner herein, and am authorized to make this verification on its behalf. I have read the foregoing San Diego Gas & Electric Company's "PETITION FOR EXEMPTION FROM CERTAIN STATE AND FEDERAL LIQUEFIED NATURAL GAS SAFETY REQUIREMENTS WITH RESPECT TO THE BORREGO LNG SATELLITE FACILITY" and know its contents. I am informed and believe, and on that ground allege, that the matters stated in it are true; and I make this verification for and on behalf of said Petitioner as such officer.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 2-23-83 at San Diego, California.

(signed)

RALPH L. MEYER

For the diagrams and equipment list attached to this petition, see paper copy available in Office of Pipeline Safety file.

*Attachment to 04/30/85 letter from the California
Public Utilities Commission to the U.S. DOT*

April 18, 1985

San Diego Gas & Electric Company
P.O. Box 1831
San Diego, CA 92112

Attention: H.P. Morse
Manager-Regulatory Affairs

Gentlemen:

We are enclosing a copy of the letter we received from the U.S. Department of Transportation (DOT) concerning a waiver from compliance with certain sections of 49 CFR Part 193 for your Borrego Springs plant. This waiver was granted subject to DOT's approval in Commission Decision 83-11-017 dated November 2, 1983.

DOT has reconsidered its prior objections to the waiver and believes as discussed in the attached letter, that SDG&E is not required to have the gas and fire detection systems indicated in sections of 193. Accordingly waiver of these requirements is unnecessary.

If you have any questions, please contact Joseph McMahon at (415) 557-3183.

Very truly yours,

JOHN E. JOHNSON, CHIEF
Service & Safety Branch

Attachments: Letter from DOT

cc: Bruce Williams, SDG&E

JM:crp

December 30, 1983

Joseph E. Bodovitz, Executive Director
California Public Utilities Commission
California State Building
San Francisco, CA 94102

Dear Mr. Bodovitz:

We acknowledge receipt of your transmitting letter dated November 4, 1983, and its attachment, relating to a grant of waiver to the San Diego Gas and Electric Company of 49 CFR Sections 193.2507, 193.2819, 193.2821, 193.2911, 193.2913, and 193.2915, by the Commission. This correspondence was received by the Materials Transportation Bureau on November 15, 1983.

The Natural Gas Pipeline Safety Act of 1968 as amended, in Sec. 3(d), provides that a State agency must give the Secretary written notice at least sixty days prior to the effective date of the waiver, as noted in both your letter and the order. The effective date of the waiver could not, therefore, be before January 14, 1984, barring any objection by us.

Based on a tentative review and evaluation of the information you have provided, we object to the waiver. We are preparing a more detailed response giving our reasons for the objection, which we will send to you by January 14, 1984. Accordingly, under Sec. 3(d) of the Act, the waiver is hereby stayed. The Commission may appeal this action after receipt of our forthcoming statement of reasons by supplementing your original letter with additional information.

Sincerely,

Original signed by

Richard L. Beam
Associate Director for
Pipeline Safety Regulation
Materials Transportation Bureau

cc: DMT-30, DMT-31(2), DMT-1, BRF, California State Files DMT-13, DMT-18
Mr. Walt Dennis:bac:DMT-31:x62393:12/30/83

January 13, 1984

Mr. Joseph K. Bodovitz
Executive Director

California Public Utilities Commission
California State Building
San Francisco, CA 94102

Dear Mr. Bodovitz:

As promised in our letter of December 30, 1983, this details our objections to the Commission's grant of waiver to the San Diego Gas and Electric Company (SDGE) from compliance with certain provisions of 49 CFR 193 at its Borrego Plant (Plant). The six safety standards waived are sections 193.2507, 193.2819, 193.2821, 193.2911, 193.2913, and 193.2915. Waiver was made contingent on the addition of unmonitored flame and gas sensors to an existing automatic shutoff system.

In its "Opinion", the Public Utilities Commission of California (PUC) notes that SDGE sought exemption from two sections in NFPA 59A plus other sections of 49 CFR 193. Specifically, these other sections are sections 193.2407, 193.2409, 193.2439, and 193.2441. The PUC explains that the 59A sections are not applicable because the Plant was subject only to NFPA 59A, 1967 when built.

For the same reason, the Plant is not subject to these other sections of 49 CFR 193, which as design requirements are grandfathered. However, the SDGE request indicates a clear misunderstanding of Part 193 in this respect, and thereby casts doubt about their understanding of the Part 193 standards in general. Existing, unmodified facilities built in 1968 to 1967 NFPA standards are not subject to Part 193 standards on siting, design, construction, or related requirements for personnel qualifications and training (Subparts A, B, C, D, E and H). They are subject to standards in Part 193 for operation, maintenance, fire protection, security and related requirements for personnel of qualification and training (Subparts F, G, H, I and J), which include the specific sections waived.

Where a facility has not been sited, designed, or constructed in accordance with Part 193 requirements, as with existing facilities, fullest compliance with the applicable operating related requirements becomes most crucial to LNG safety, unless specific deviations can be thoroughly justified. Such justification would require unique circumstances or alternate safety provisions, and must assure an equal or higher level of safety.

Section 193.2819(e) Portable Gas Detectors

Among other things, section 193.2819 (Subpart I - Fire Protection) provides, in paragraph (e), that at least two portable gas detectors must be available at the plant for use at all times. The PUC asserts that it has determined that such detectors are not needed in addition to a fixed detection system. We are not made privy to the considerations or reasoning involved in this determination, such as the Plant's impoundment and siting provisions, particularly its protection zones for public protection from thermal radiation and vapor dispersion and the associated extent of hazard to the public.

Further, no information is provided on the additional fixed detection system, referred to by the PUC, and as required under sections 193.2819(a)&(f) and 193.2821(a). Under section 193.2819(a)&(f), continuously monitored fixed gas detectors are required at specified Plant locations. Each detector must have both audible and visible alarms located at an attended control room or station and an audible alarm at the sensing locations [paragraph (b)] which are activated at 25 percent or less L.F.L. [paragraph (c)]. Paragraph (f) requires similar detection systems for enclosed buildings, which may not exist at the satellite plant.

PUC's action in waiving requirements for on-site alarms, as well as remote monitoring, negates any possibility that the fixed systems required by sections 193.2819 and 193.2821, are intended. Accordingly, it appears that the provisional unmonitored flame and gas sensors to actuate automatic shutdown is the fixed system to which the PUC makes reference. However, this automatic shutdown system is clearly not a substitute for the fixed systems required under 193.2819 and 193.2821.

The requirements of 193.2819(e) for portable gas detectors are intended to assure that an alternate means of gas detection will be available at the site when needed for use by competent personnel in:

- (1) cases where the fixed system has failed;
- (2) checking operational integrity or for quickly evaluating a potential fault in the fixed system, such as a continuous sounding alarm;
- (3) testing for safe entry by personnel into a suspect area or enclosed building; and
- (4) pin pointing leakage, determining the area of contamination, and evaluating the degree of hazard.

Where large attended plants would normally be expected to have a number of portable detectors onsite, this requirement was considered to be of particular importance for the safety of small, remote, unattended satellite plants. In the latter case, plant personnel journeying to the remote site for other or routine purposes might fail to carry gas detectors along. This requirement is intended to assure that reliable detectors are available for both protection of the attending personnel and to enable a valid check and evaluation of any suspect condition that might be noticed. Also, where a satellite plant is quite distant, detectors would be locally available by prior arrangement for use by police or fire associations in checking out reported possible emergency conditions.

The unmonitored flame and gas sensors actuating a shutdown are not a substitute for this provision.

Sections 193.2819(b), (c), (d), and (f), and 193.2821(b) - On-site alarms.

Among other things, these sections require on-site alarms for gas and fire detection by fixed systems, as mentioned previously. Either one or both audible and visible alarms are required, depending on location and type of hazard. The PUC reasons that since personnel are on-site only during tank filling operation, onsite alarms should not be required.

For new facilities, section 193.2439 requires emergency shutdown control systems to automatically shutdown a facility in the event of an aberrant operation. Two of a variety of events initiating automatic shutdown are fire or 40 percent L.F.L. gas concentration in the area of a component. Unattended facilities, such as those at the SDGE plant, are specifically recognized in paragraph (c). Here, where a reasonable delay may otherwise be programmed into the automatic shutdown system to provide time for manual response, such delay is not allowed at remote unattended facilities.

Paragraph (c) of section 193.2819, which is applicable to existing as well as new facilities, provides that alarms must be activated at no more than 25 percent of the L.F.L. of the gas being monitored. (This provision would be included in the waiver, but is not discussed in the PUC document.) An alarm response to a lower L.F.L. would provide some period of time for an operator to take action to correct a problem condition. In some instances, warning time might be sufficient for the operator to prevent a small leak from developing into an event of potentially serious consequence, or at least, an unplanned shutdown. Immediate warning of the presence of a small fire would have a similar safety benefit.

Even for new facilities, meeting all the design and construction safety standards, the requirement for early warning by alarms is particularly significant for the safety of remote, unattended facilities where maximum time for response is most necessary. For existing facilities, where design and construction is unlikely to meet all the safety requirements applicable to a new plant, maximum time for response becomes more crucial.

The primary purpose of on-site alarms is to provide:

- (1) A backup for the required fixed system alarms at an attended control station. With particular consideration of remote unattended facilities, on-site backup becomes more important because distance to a remote plant may result in only infrequent observation by plant personnel. Reporting of on-site alarm activation could be initiated either by:
 - (a) prior arrangement between a prudent management and local police, fire association or nearby residents; or
 - (b) spontaneous action by a nearby resident or passer by
- (2) For personnel safety on-site by giving warning to prevent entry or to permit escape from a potentially hazardous location. At an attended site, this measure serves the safety principally of plant personnel. At an unattended site, on-site alarms are more crucial, in that they principally serve the safety of the public at large by warning away from a potential hazard, individuals who may be trespassing, just passing, or otherwise close by. It, also, is more important to unattended plant personnel because personnel presence at critical locations is much less frequent, and they are not backed up by warning from an attended on-site control station.

Unmonitored flame and gas detectors intended to actuate a shutdown are not a substitute for on-site alarms.

Sections 193.2507, 193.2819(b), (c), (d), and (f) and 193.2821(b) - Attended control station alarms.

Together with other requirements, these sections also require alarms at attended control stations for gas and fire detection by fixed systems. The PUC argues that, because its staff observed no visible activity onsite during normal operation, monitoring at an attended station would not be efficient use of personnel since tank shutdown would be the only useful course of action.

First, it seems important to mention that the purpose of fire and gas alarms are not to observe activity during normal operation. Rather, these alarms are intended to alert plant personnel to an abnormal condition of impending or existing danger, as quickly as possible, in order to provide for immediate corrective action, which might serve to mitigate the danger or its consequence.

To serve the purpose intended, warning devices would be designed to gain the attention of personnel, as described in section 193.2435. Attending personnel could regularly perform other assigned duties unless alerted by alarm. Thus, use of personnel as prescribed by the standard, would not be inefficient, as claimed by the PUC.

In connection with the PUC argument that tank shutdown would be the only useful action (presumably by the automatic system), the PUC "Opinion" comments that staff review shows that the leak and fire detection equipment, if connected to the existing shutdown system, could cut LNG flow. However, no description of the shutdown valve location, or possible upstream leakage or rupture is given. Since an

internal shutdown valve is unlikely with this type of tank, external upstream piping connections and even some length of pipe is most probable. In the case of secondary loading, this upstream location would likely be subject to the greatest stress, and therefore most subject to failure and spill continuation even if the shutdown valve is actuated.

In the event of an alarm indicating fire or the presence of gas, immediate response might prevent a minor event from becoming one having serious consequences. Fire might be from a nearby auto accident, an overturned tank truck carrying flammable fluids, or even a small plane crash. It might be only a nearby grass or woods fire. Quick response might contain the fire and so prevent it from threatening the tank and causing a possible BLEVE. Similarly, a leaking flange gasket, valve stem seal, or faulty relief valve discharge might be corrected before the leak develops into one more serious, or an unplanned tank shutdown occurs. The consequent safety problems inherent with an unexpected shutdown and subsequent program to individually close off, purge into service, and restart service to 300 customers would be avoided.

Certainly, in the event of fire or vapor alarm, operator personnel would not stand about hoping the tank would automatically be safely shutdown, as envisioned by the PUC. Rather, they would proceed in accordance with "emergency procedures" and "fire prevention plan", utilizing "fire equipment" where necessary, as prescribed under sections 193.2509, 193.2803 and 193.2817 respectively.

Initial response might be only a radio dispatch of service men or crews, working nearer to the site, for a first hand description and evaluation by radio communication with trained personnel. Response might be more comprehensive, involving immediate contact with local officials and possible implementation of evacuation plans, as required by section 193.2509, depending on information from data transmitted to the control station.

For a remote, unattended facility, the ability to respond rapidly to a potentially serious hazard by alerting personnel at an attended control station with alarms, in accordance sections 193.2819 and 193.2821, is one of the most important safety requirements. Otherwise, compliance with other safety requirements, such as section 193.2509, might not be possible. Unmonitored flame and gas detectors actuating a tank shutdown valve is not a substitute for this provision.

Sections 193.2911, 193.2913, and 193.2915, Security lighting, monitoring and alternate power.

Lighting with specified minimum intensity for on-site monitoring of the protective enclosure and certain specified facilities is required by section 193.2911, only if a security warning system under section 193.2913 is not provided. This section (193.2913) provides that monitoring may be by either visual observation in accordance with a schedule under section 193.2903(a), or by a security warning system transmitting information to an attended location. Under section 193.2915, an alternate power source is required to meet section 193.2445 and for security lighting and monitoring.

According to the PUC, on-site monitoring would be extremely costly for the benefit derived. PUC implies that it has determined that security monitoring is not required. Therefore, PUC concludes that neither security lighting nor an alternative power source are needed.

The PUC view about the costliness of on-site monitoring is not supported. Nor is even an amount given. The only dollar value shown (in PUC's "Opinion") is \$225,000, as the total cost for changes, submitted by SDGE in its original waiver request. This amount is said to be four times original plant costs, but this claim is inaccurate since it compares 1968 dollars with 1973 dollars. Also, comparing current safety costs

to the low cost of a plant built to the very minimal 1967 NFPA 59A standards (which even the 1971 edition of 59A recognizes as being inadequate) serves no useful purpose. Moreover, not only is the amount unsubstantiated by component detail, but the method and values (i.e., handling of taxes, debt equity ratios, investment credits, interest rates, etc.) used in determining the present worth amount for annual O&M expense is not shown. Finally, this cost would include design changes listed in the original SDGE request and therefore has no applicability.

Remote unattended facilities were specifically considered in section 193.2913, where provisions for security warnings transmitted to an attended location would make on-site visual monitoring and associated lighting unnecessary. For smaller plants (40,000 m³ or less), monitoring of only the protective enclosure is required. This provision, not discussed by PUC, makes moot the issue of on-site visual monitoring and the associated extremely high cost claimed by PUC.

For a remote unattended station, monitoring from an attended station, and liaison with local law enforcement officials (as required by section 193.2903(g) and 193.2509) provides the most effective security by providing for instant awareness and quick response. Also, it is relatively economical since signal transmission will be required for fire and combustible gas warning, and additional sound, or other frequency signals, can be multiplexed across the same telephone wire pair.

During development of the standards, discussions were held with a division of the FBI at Quantico, Virginia, on security matters. It was their view that a provocateur would focus on remote unattended LNG plants, since potentially high casualties from urban facilities would serve to damage their cause. MTB considers a viable security warning system to be vital to public safety and continued public acceptance of the LNG industry. An unmonitored fire or gas detection system activating tank shutdown is not a substitute for a security warning system.

With a security warning system, an alternative power source for security lighting is not needed. However, alternate power may be required for fire, gas, and the security warning systems, together with emergency lighting and other provisions of section 193.2445. Since the plant has no power requirements for pumps or compressors, battery packs, with automatic trickle charge when on standby, would appear to be sufficient for the requirements of section 193.2915.

Small remote unattended plants, having no pumps, compressors, or electrically operated combustion equipment are not unusual. They were specifically considered in developing the standard by the inclusion of alternate provisions and by variations in requirements according to size and type in the siting and design standards. To waive the reference operational requirements for a plant designed and constructed to the inadequate safety standards of NFPA 59A 1967, would negate justification of such standards for existing plants which have complied with these requirements, as well as for new plants constructed in accordance with much safer siting and design standards.

The referenced standards became effective at a date delayed from October 1980 to January 1, 1982, to permit time for compliance. The waiver procedure is not intended as a method for circumventing compliance. Our policy is to approve State waivers only upon an adequate showing that compliance with a safety standard is somehow inappropriate due to unusual circumstances. This would require a demonstration that the circumstances were not considered when the standard was adopted and that compensatory factors make compliance unnecessary.

While certain conditions associated with the waivers have been cited in the PUC document, none offset the purpose of the referenced rules. Accordingly, we reaffirm our objections to the waivers.

Sincerely,

Original signed by

Richard L. Beam
Associate Director for
Pipeline Safety Regulation

cc: DMT-31(2)/DMT-30/BRF
DMT-30:WDennis:rak:62392:1/13/84
File:1239

March 25, 1985

Mr. Joseph E. Bodovitz
Executive Director
Public Utilities Commission
State of California
California State Building
San Francisco, California 94102

Dear Mr. Bodovitz:

We regret the long delay in responding to your letter of July 23, 1984, which appeals part of the Commission's November 2, 1983, order granting San Diego Gas and Electric Company a waiver from compliance with several sections of 49 CFR Part 193 for its Borrego Springs liquefied natural gas plant. The order was stayed by our letter of January 13, 1984, but the only aspect appealed pertains to the sections 193.2819(b) and 193.2821(b) requirements that alarms be installed at attended locations. Waiver of the other Part 193 requirements was not appealed because, according to your letter, the Company is in compliance with those requirements.

In reconsidering our prior objections to waiver of sections 193.2819(b) and 193.2821(b), we have looked at whether gas and fire detection systems are required at the Borrego plant. As discussed below, we find that they are not required under the circumstances described in the Commission's opinion (which accompanied the order) and appeal, and, thus, the alarm requirements of sections 193.2819(b) and 193.2821(b) for which a waiver is sought do not apply. Accordingly, waiver of these requirements is unnecessary.

Gas detection systems are required by section 193.2819(a) for "[a]ll areas determined under section 193.2805(a)(2) in which a hazard to persons or property could exist." Fire detection systems are required by section 193.2821(a) for these same areas and "all other areas that are used for the storage of flammable or combustible material." Since the criteria in Section 500-4 of NFPA-70 referenced in section 193.2805(a)(2) apply to all the areas available for possible placement of gas and fire detectors at the Borrego plant, the "all other areas" portion of section 193.2821(a) is not applicable to the Borrego plant.

The criteria of section 500-4 of NFPA-70 may be used to determine several areas at the Borrego plant where "the potential exists for the presence of flammable fluids." However, gas and fire detection systems are required for these areas only if they are areas in which "a hazard to persons or property could exist." In discussing the limiting effect of this language, the final rule document which established section 193.2819(a) states:

"MTB agrees with the commenters that it may not be necessary to monitor all areas determined under section 193.2805(a) that have a potential for the presence of gas. For example, properly designed vents and open air storage areas safely separated from ignition sources would not normally become hazardous with the escape of gas. Therefore, MTB has . . . reworded section 193.2819(a) to require operators to monitor only those areas in which a hazard could exist." (45 FR 70399)

To indicate that the same limitation applies to fire detection under section 193.2821(a), the final rule document further states:

"Thus, the required placement of fire detectors is adopted as proposed, except that for consistency with section 193.2819(a) detectors need only be placed where a hazard to persons or property could exist." (45 FR 70400)

Could a hazard to persons or property exist at the Borrego plant in any of the areas determined under section 193.2805(a)(2)? To identify the areas under consideration, we believe the criteria of Section 500-4(b)(1) of NFPA-70 best match the areas of the Borrego plant (surrounding the tank, transfer lines, and ambient vaporizers). These are areas "in which the hazardous liquids, vapors, or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems, or in case of abnormal operation of equipment." To assess the risk in these areas, we note from the Commission's opinion and appeal that the plant is small (7750 gallons), remotely located, and separated by about 1000 feet from the mobile home park it serves. It is simple by design, using no pumps, compressors, or other complex machinery. It has no electrical or combustion equipment (which could ignite a gas leak), contains few moving parts, and has a minimum of potential leak sources. In its 14 years of operation the facility has never experienced a gas fire, a significant gas leak, a significant LNG leak or spill, or any personal injury, safety or security-related incident. The plant is unattended during normal operation, except for inspection, maintenance and delivery activities. Further, the entire plant is open to the air, and the amount of potential leakage is limited by the existing emergency shutdown system. Considering these factors, we do not think that any areas determined under section 193.2805(a)(2) could be considered hazardous under the operating circumstances described in the Commission's opinion and appeal. Therefore, gas and fire detection systems are not now required.

If the operating circumstances at the Borrego plant change significantly to the extent that a hazard could exist in any of the section 193.2805(a)(2) areas (for example, by introduction of potential ignition sources), then gas and fire detectors would be required for those areas, and the alarm requirements of sections 193.2819(b) and 193.2821(b) would apply. In such case, upon further request by the Commission explaining the new circumstances, we would be glad to reconsider the question of whether a waiver should be granted for the requirements that alarms be installed at attended locations.

Despite our findings in this matter, the Commission may, if it sees fit, require installation of the planned gas and fire detection systems and their connection to the existing emergency shutdown system.

Sincerely,

Original signed by

Richard L. Beam
Associate Director for
Pipeline Safety Regulation
Materials Transportation Bureau

cc:

DMT-30/31/32/13/18/BRF

DMT-31:LMFurrow:rak:426-2392

FILE: California State Waiver File