Investigation of the UGI Corporation Natural Gas-Fueled Explosion and Fire at Building 2 of the R.M. Palmer Company on March 24, 2023

NTSB Docket PLD23LR002

R.M. Palmer Company's Party Submission

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1. Introductory Statement.

R.M. Palmer Company (Palmer) participated as a party to the National Transportation Safety Board's (NTSB) investigation into the UGI Corporation (UGI) natural gas-fueled explosion and fire at Palmer's Building 2 on March 24, 2023, in West Reading, Pennsylvania. In accordance with 49 C.F.R. § 831.14, Palmer respectfully submits the following proposed findings drawn from the evidence made available to Palmer during the investigation.

Palmer appreciates the opportunity to provide this Party Submission to the NTSB and remains available to answer questions or discuss its submission further.

2. Background and Overview of R.M. Palmer Company.

Palmer is the fifth leading chocolate molding company in the United States and produces seasonal chocolate novelties for all of North America. It is headquartered in Wyomissing, Pennsylvania and was founded in 1948. In addition to manufacturing chocolate holiday novelties under its own brand, it also performs contract manufacturing for other brands and is the largest contract chocolate molding manufacturer in the United States.

At the time of the subject explosion, Palmer's operations included six buildings located in West Reading and Wyomissing, Pennsylvania. Three of the six buildings are utilized for manufacturing chocolate. The West Reading manufacturing facilities consisted of two buildings, Building 1 and Building 2. Building 1 functioned as the company's corporate headquarters and contained several production lines. Building 2 had one production line.

Building 3 is Palmer's state of the art manufacturing facility that can produce over 1,000,000 pounds of chocolate per week. Building 4 is a storage facility and training center for Palmer's employees. Building 5 is also utilized for storage. Building 6 is Palmer's distribution

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center. It is a 350,000 square foot facility utilized for storage and shipment of products to customers across the country.

Palmer has approximately 500-550 full time employees and a seasonal staff of 200-300 employees. Palmer operates its facilities in three shifts: first shift from 7:00 a.m. to 3:00 p.m., second shift from 3:00 p.m. to 11:00 p.m., and third shift from 11:00 p.m. to 7:00 a.m. Each shift has a chain of command. The line employees working the various manufacturing lines report to the Lead overseeing their manufacturing line. The Leads report to a Shift Supervisor, who in turn reports to the Plant Manager.

The subject explosion concerns Building 1 and Building 2, located in West Reading. Building 1 and Building 2 sit on opposite sides of Cherry Street in West Reading, a public street:¹



Figure 2. Pre-accident view of building involved in accident (left, Building 2) and adjacent building (right, Building 1). Source: Google maps

¹ Image from NTSB Operations Factual, Fig 2, p. 8.

UGI supplied natural gas to Building 2 via a meter set located outside of Building 2. In 2021, UGI relocated the meter set from inside Building 2 to outside the building.²



Figure 4. Building 2 meter set (Source: Palmer, taken after 2021 meter relocation project, date unknown)¹¹

Notably, while Palmer does have natural gas service to Building 2, <u>Palmer does not utilize any</u> <u>natural gas in its industrial chocolate manufacturing processes</u>. Palmer does <u>not</u> own any buried natural gas piping. The only natural gas-fueled appliances in Building 2 were two heaters and one water heater, both in the basement. <u>Palmer's use of natural gas was no different than</u> <u>an office building or residential home.</u> Palmer contracted with Berkshire Mechanical for any repair or other issues with its natural gas appliances in Building 2.

² Image from NTSB Operations Factual, Fig. 4, p. 10.

On the date of the accident, seven employees were assigned to work in Building 2. These employees were performing a "changeover" in which the manufacturing line in Building 2 was being cleaned and changed to begin the manufacture of a different mold of candy. No candy was being produced in Building 2 on the day of the accident. The workers assigned to Building 2 were reporting to a Line Tech. The Building 2 Line Tech reported to the Second Shift Supervisor.

3. Palmer's Safety and Evacuation Procedures.

Palmer is a safety-focused company and prides itself on its safety record and safety culture. Palmer fosters a safe work environment primarily through its Safety Committee process. The Safety Committee is comprised of Palmer employees from various shifts and job titles. It meets monthly to discuss safety issues within the company, including the findings from weekly safety inspections that are conducted by members of the Safety Committee. The weekly inspections include items like trip and fall hazards, machine guards, emergency exits, and other safety issues or situations as warranted. The monthly Safety Committee meetings, at the time of the accident, were run by the HR Director. The minutes of the Safety Committee meetings were posted on company communication boards to inform all employees of any safety issues that had come up or were being addressed. Palmer maintains a non-punitive, open-door safety culture such that any employee could report any safety issue to any member of the senior management team.

As part of Palmer's safety program and safety training, employees are trained on evacuation in the event of a fire. Regular fire drills are conducted, with approximately 27 fire drills having occurred from 2018 - 2022.³ All Palmer employees are empowered to pull a fire

³ Palmer-NTSB-000284 - 000310.

alarm and trigger an evacuation if there is any concern about the risk of a fire event. Notably, Palmer's fire evacuation route for Building 2 would have had employees evacuating the building, and walking down Cherry Street or in front of Building 2 along 2nd avenue to reach the muster point on 2nd Ave and Franklin, less than a block from Building 2.⁴



⁴ Images from Palmer-NTSB-000050 – 000052.





Had employees evacuated pursuant to this plan, they would have been placed directly in harm's way of the subsequent explosion, including walking down Cherry Street and directly over the source of the natural gas leak. Even the muster point at 2nd Ave and Franklin was less than a

block from Building 2, and would have exposed these employees to significant shrapnel from the explosion, potentially leading to a greater number of injuries or deaths. Given that the source of the natural gas leak has been determined to be a faulty tee underneath Cherry Street – outside of both Building 1 and Building 2 – there is no way that Palmer, acting without the benefit of hindsight, could have known where a safe place was for the employees to evacuate to in response to this leak.

At the time of the accident Palmer did not have, nor was it required by federal, state or local laws or regulations, to have a natural gas leak or odor response procedure. Palmer is unaware of any similarly situated company in the area that had a natural gas leak or odor response procedure prior to this accident. Palmer has, since this accident, nonetheless created and implemented a natural gas leak or odor response procedure and training, as discussed more fully below.

4. Palmer's Investigation of Odor Reports.

The NTSB's Video Specialist's Report sets forth a timeline of the activities of selected employees of Palmer in the minutes leading up to the explosion at 16:55 EDT on March 24, 2023. The report indicates that at 16:42 Palmer's Lead Mechanic (noted as V1 in the Report) exited Building 1 and entered the basement of Building 2, ostensibly to investigate the source of the odor.⁵ Palmer's Lead Mechanic would later be joined in investigating the odor by Palmer's Plant Manager (noted as V2 in the Report) and HR Director (noted as V3 in the Report).⁶ According to the Report, the Lead Mechanic, Plant Manager, and HR Director were all investigating near the meter set outside of Building 2 as well as in the basement of Building 2 in the 13 minutes leading up to the explosion. Palmer was concerned enough about the odor to have

⁵ NTSB Video Specialist's Report, at p. 5.

⁶ NTSB Video Specialist's Report, at p. 6-7.

its highly experienced Lead Mechanic and two of its more senior managers personally investigate the matter. These individuals were responding to the situation when the explosion happened and all three suffered fatal injuries as a result. If Palmer as a company, or any of these employees, had been alerted, advised or warned by UGI of the danger of a natural gas leak, they would certainly not have placed themselves in harm's way investigating an odor, let alone have allowed Palmer's employees to remain in the buildings.

While it is easy to assert after the explosion that these senior staff should have immediately evacuated both buildings, it is important to consider the context of the chronic history of UGI gas leaks at the buildings and UGI's failure to order or recommend an evacuation in any of these instances. In just the 30 months prior to the explosion UGI records reveal 12 leaks:⁷

- In September of 2020, seven leaks were found at the meter set and it took UGI three days to repair them. <u>UGI did not order or recommend any evacuation</u>.
- In February of 2021, leaks were found at two meters. <u>UGI did not order or</u> recommend an evacuation.
- In January of 2022 a leaking coupling was found. <u>UGI did not order or</u> recommend an evacuation.
- In March of 2022, only two months later, two more leaks were found at a meter set. <u>UGI did not order or recommend an evacuation</u>.

⁷ Information from UGI 5 Year Leak History, NTSB-UGI-00090, emphasis added.

Date	UGI Notes	UGI Suggestion or Order that Palmer evacuate?		
09-15-20	Odor Complaint.			
	Odor outside boiler house by awh (sic) back of building located in alley by parking lot			
	"Found 7 leaks on meter set , I talked to D. O'Donald cause (sic) this is an M&R job so he called M. Roberts and he is coming out tomorrow to look at the job and to replace with a new welded set"	NO		
09-18-20	Odor Complaint			
09-18-20	"Steve Sassaman called saying he smells gas at meter outside"			
	"there was a leak called in for this meter, on 9/15, I called Miek R, he said he knows about the problem and is working on getting a welded set to replace what is @ prop, used gmi checked meter, outside piping, inside boiler room ok, readings from ret and outside piping. "	NO		
02-16-21	Inside Leak Survey.			
	"called in by lucas (sic) doing slip order leak at 2 meters there ."			
	"used gmi check meter set and conn. in bldg. got 15 lel at check curb box got 30 gas made c leak call for crew and monitor leak. also 2 nd leak at meter set in different bldg. woody and I will repair same"	NO		
01-06-22	Leak Survey			
	Leaking Coupling	NO		
	"2x2 ma cut tighten 2 nd st dresser"			
03-11-22	Odor Complaint			
	"Steve Sassaman called to say smelling faint odor of gas at meter said he spayed it and it bubbled"	NO		
	" check meter set found 2 leaks repair both leaks check ok tightened bolts and plug no other leaks found this was at a different meter outside"			

Even if the Palmer senior staff who perished in the accident had at one time thought that an

evacuation was the prudent response to a natural gas leak, the negative reinforcement of having

UGI address 12 leaks in just the 30 months prior to the accident without ordering or recommending an evacuation makes their investigation on the day of the explosion much more understandable.

5. Palmer's Employee Discipline and Attendance Policies.

According to the NTSB Emergency Response Group Factual Report, employees working in Building 1, Shift 2 reported smelling gas and reporting the odor to the Second Shift Supervisor, who indicated that those employees could leave or go home early.

The Report further notes, however, that "some employees reported to NTSB investigators they did not feel they could evacuate for fear of losing their job."⁸ This does not accurately reflect the Attendance Policy at Palmer.

Palmer's Attendance Policy is a point-based system. Employees receive one point for each unexcused or unreported absence.⁹ An employee will receive no disciplinary action until eight points are accumulated. Employees are not terminated until twelve points are accumulated. If an employee clocks out early, or fails to clock in for an assigned shift, a point is automatically generated by Palmer's AS400 employee time clock system. Each time a point is assessed, a review of the reason for the assessment of that point is conducted and may result in a reversal of the attendance point. For example, the instance of an employee becoming sick at work and needing to leave, or if a snow day was called and employees were sent home, a point may be generated by the time clock system. However, that point would be reversed when reviewed by Palmer's HR department as an excused absence. <u>An evacuation for a gas leak or any other safety</u> <u>issue would be treated the same way, and an employee would not face a point assessed or any</u> <u>other disciplinary action in the event of an evacuation for a valid, safety-related reason.</u>

⁸ NTSB Emergency Response Group Factual Report, at p. 9.

⁹ Palmer Attendance Policy, Palmer-NTSB-000270-273; NTSB Palmer CEO and VP Interview Transcript.

Significantly, none of the employees in Building 2 had accumulated enough attendance points that one additional point, even on a temporary basis, would have resulted in termination or any other disciplinary action.¹⁰

6. UGI Was Aware of Steam Line Location in 2021.

As discussed in the NTSB Operations Factual Report, in 2021 UGI relocated the meter set for Building 2 from inside the building to outside the building. The NTSB investigative team has made particular note of several Palmer pipes, including a steam pipe, under Cherry Street between Palmer's Building 1 and 2. These Palmer pipes were specifically called to UGI's attention when UGI relocated its meter from inside Building 2 to outside Building 2 in 2021.¹¹

Palmer does not own any buried underground natural gas piping at or around either Building 1 or 2.

The NTSB Operations Factual Report notes that as UGI was unearthing its natural gas assets during its meter relocation project in 2021, it discovered a white powder which, after the accident, the NTSB found to be calcium carbonate.¹² Although Palmer is a party to the investigation, it is not aware of what significance, if any, the investigative team may accord this calcium carbonate. We note, however, that calcium carbonate is routinely used for insulation around buried underground steam pipes as a "pour in place" hydrophobic powder marketed under the names DriTherm and Protexulate (http://www.dritherm.com/).

¹⁰ Palmer email to NTSB, dated August 17, 2023.

¹¹ NTSB Operations Factual, Section 2.1, at p. 13.

¹² NTSB Operations Factual, Section 3.2.5, at p. 53.

7. UGI Never Warned R.M. Palmer to Evacuate During Previous Calls.

According to Section 2.2 of the Emergency Response Factual Report, Palmer had five

odor complaints to UGI between 2020-2022:13

2.2 Previous Gas Incidents

R.M. Palmer had five odor complaints to UGI between 2020-2022. The incidents included a leak at the meter sets for Buildings 1 and 2 and the boiler house. UGI technician notes listed that repairs were completed by either replacing the meter set or tightening bolts and fittings. $^{\mbox{\tiny 21}}$

The document from which this information was derived sets forth a summary of each of these interactions as follows:¹⁴

Date	Address	City	Source	Notes from Order Generation	Order Notes from Tech
9/15/2020	77 2ND AVE	WEST READING	Odor Complaint	Sue Halvonik //gas odor outside boiler house by awh back of building located in alley by parkinglot/no 09/15/2020 17:41:03 EST Kimberly Martinez (ZZKMARTINEZ) no noise/xst: Terry St or Franklin St Palmers Chocolate factory /no covid19 exposure/gave precautions	FOUND 7 LEAKS ON METER SET, I TALKED TO D.ODONALD CAUSE THIS IS AN M+R JOB SO HE CALLED M.ROBERTS AND HE IS COMING OUT TOMORROW TO * LOOK AT THE JOB TO REPLACE WITH A NE W WELDED SET, I CHECKED BOILER BUILDING AND NO GAS READS WERE PRESENT
9/18/2020	77 S 2ND AVE	WEST READING	Odor Complaint	Steve Sassaman called saying he smells gas at meter outside. 09/18/2020 11:58:21 EST Darlene Rico (ZZDRICO) no noisesgave precutaionxst Franklin st ph # No Covid-19 symptoms or exposure maintain 6ft social distance	there was a leak called in for this meter,on 9/15,I called Mike R,he said he knows about the problem and is working on getting a * welded set to replace what is @ prop.used gmi checked meter,outside piping,inside boi ler room ok,readigns from reg and outside * piping
2/16/2021	77 S 2ND AVE	WEST READING	Inside Leak Survey	Clara Harvey (CHARVEY) xst carey st - called in by lucas doing slip order leak at 2 meters there	used gmi check meter set and conn. in bldg. got 15 lel at check curb box got 30 gas made cleak call for crewand mointoir leak * also 2 nd leak at meter set in different bldg woody and i will repair same
1/6/2022	77 S 2ND AVE - Franklin Street	WEST READING	Leak Survey	Leaking Coupling	2x2 ma cut tighten 2" st dresser
3/11/2022	77 S 2nd Ave *3	West Reading	Odor Complaint	Jodi Guillaume (JGUILLAUME) Steve Sassaman called to say smelling faint odor of gas at meter said he sprayed it and it bubbled. 77 S 2nd Ave W Reading he is on location. can call his cell fineeded. no c ovid. gave precautions. Thanks	check meter set found 2 leaks repair both leaks check ok tightened bolts and plug no other leaks found thisvwas at a different * meter outside
3/24/2023	77 S 2nd Ave *1	West Reading	911 Notification	Per 911 explosion at residence, mulitiple injuries, entrapment xst cherry fire dept on scene, secondary explosions happening	 There was a incide nt with a building on s 2nd called duty sup with help form other ugi personal we shut off main valves to islocate area,went to properties with help from other ugi personal to shut of meters on the unplaned shut down list i talked to fire cheif 6 peo ple where taken to hospital 8 where unknown and there was 1 fatality and 3 people evacuated wait to be relived buy duty sup

 ¹³ NTSB Emergency Response Group Factual, Section 2.2, at p. 11.
 ¹⁴ Image from UGI 5 Year Leak History, NTSB-UGI-00090.

Three of these interactions were odor complaint calls from Palmer and two were the result of leak survey work being conducted by UGI. There is no evidence that UGI ever informed or cautioned Palmer that it should have evacuated or taken any other action a result of the leaks discovered by UGI at Palmer's facilities.

8. OSHA's Citations to Palmer.

The NTSB Emergency Response Factual Report contains a Section describing the OSHA citations issued to Palmer as a result of this accident. As noted in the Report, R.M. Palmer has filed a Notice of Contest to all of the citations, but specifically Citation 1, Item 1, based on the General Duty Clause. The General Duty Clause requires employers to "furnish to each of their employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to their employees." To establish a General Duty Clause Violation OSHA much prove that:

- The employer failed to keep the workplace free of a hazard to which employees of that employer were exposed;
- The hazard was recognized;
- The hazard was causing or was likely to cause death or serious physical harm; and
- There was a feasible and useful method to correct the hazard.

As earlier noted, there are no federal, state or local laws or regulations requiring Palmer to have a natural gas leak or odor response procedure. A natural gas leak is not a recognized hazard in the confectionary industry, and there is no published guidance by OSHA indicating what is a reasonably inquiry after detecting gas. <u>OSHA has never before issued a General</u>

Duty Clause violation for failing to evacuate after a natural gas explosion.

9. Palmer's Post-Accident Actions and Policy Changes.

Following the March 24 accident, Palmer has implemented several new safety actions, nearly all of which are outlined in Section 6.0 of the Emergency Response Factual Report. As noted in the Report:¹⁵

R.M. Palmer has taken several safety actions since the March 24 incident. The company has developed a natural gas procedure for how to respond to a natural gas leak. The procedure directs employees to stop work immediately when they detect the odor and determine the source of the odor. If the odor is determined to be potentially dangerous, then employees are to evacuate immediately. The company has also installed natural gas detectors in all of their buildings that are monitored by an alarm company. R.M. Palmer will receive notification by the alarm company when safety levels are exceeded. The natural gas procedures requires that supervisors who are notified by the alarm company must evacuate the building immediately using the page phones. The procedure also lists UGI's website on what actions the public should take when they smell natural gas.

R.M Palmer has also developed a Workplace Safety training in both English and Spanish, which has been administered to all employees and is part of the annual refresher training and program. The training includes odor awareness with a natural gas scratch and sniff card. The company has also removed natural gas heaters and gas piping from their basement chocolate room in some of their buildings and replaced it with electric heaters.

In addition to the steps and actions set forth in that Report, following the release of the

NTSB's Investigative Update dated July 18, 2023, Pennsylvania Federal Represtative Houlahan visited the Palmer facility, inquiring whether there was anything she could do to assist. Palmer's CEO responded by asking if there was anything that could be done about the Adyl A piping referenced in the Investigative Update, not just for Palmer but for the entire community so no other business or organization has to endure a tragedy like Palmer did. Pennsylvania Federal Representatives Houlahan and Meuser jointly introduced, and Palmer has supported, the "Adyl A Hazard Reduction and Community Safety Act" (H.R. 5638) to identify and eliminate the use of

¹⁵ Emergency Response Group Factual Report, Section 6.0, at p. 36.

Adyl A Polyurethane piping – piping previously identified in 2007 by PHMSA as piping material with poor performance histories relative to brittle-like cracking.¹⁶

¹⁶ https://www.govinfo.gov/content/pkg/FR-2007-09-06/pdf/07-4309.pdf

Palmer Company's Proposed Findings of Fact

1. Palmer was not required by any federal, state, or local regulation or ordinance to have a natural gas leak or odor response procedure.

Palmer is a natural gas customer utilizing natural gas for ordinary, non-industrial use such as heating of the basement and hot water. Palmer does not utilize natural gas for any of its manufacturing or industrial processes. As highlighted in Sections 2.4 – 2.6 of the NTSB Emergency Response Group Factual, no federal, state, or local regulation or ordinance required an entity such as Palmer, which was not utilizing natural gas in any industrial process, to have a natural gas leak or odor response procedure. Palmer, with its routine and non-industrial use of natural gas, was similarly situated to any other office building or even residential home. Palmer is unaware of any other similarly situated businesses in the community that had specific natural gas leak or odor response procedures at the time of the accident, and as such, its lack of such a procedure did not violate a community or industry standard.

2. If Palmer had evacuated its facilities pursuant to its published fire evacuation procedure it is possible that the natural gas explosion would have resulted in more injuries or deaths.

The suggestion that Palmer should have evacuated and all injuries and deaths as a result of this accident would have been avoided is one borne completely of hindsight and is complete speculation. Evacuation necessarily requires having a safe location to which to evacuate. The safe location for a building fire is not the same as a one for a building potentially at risk of a natural gas-fed explosion. UGI provided Palmer with no information on evacuation or responding to a natural gas leak at all, let alone where and how far away employees should evacuate in the event of such a situation. Here, Palmer's employees were investigating a natural gas leak outside of its buildings, but which had also permeated both buildings, such that no obvious source of the leak could be determined. If Palmer had evacuated pursuant to its established procedures, employees from Building 2 could have been walking down Cherry Street – right over the actual source of the gas – at the time of the explosion. Building 1 employees could have been lined up and walking down 2nd avenue in front of Building 1 and directly in harm's way. This reflects a failing of UGI in its outreach and warning of the dangers of natural gas and the sufficiency of an evacuation location for its business customers, not one of Palmer.

3. There is no evidence that UGI ever properly apprised, informed, or otherwise warned Palmer – its customer and non-industrial user of its product – of the hazards posed by a natural gas leak.

According to Section 2.3.2 of the NTSB's Safety Systems Report, UGI advised the NTSB of its public awareness activities specifically directed to Palmer. But that outreach was limited to a single scratch and sniff brochure, sent on only two occasions, to whomever receives UGI's bills at Palmer. The remainder of the activities identified are broad, community- based efforts not specifically directed to Palmer or its employees. There was no outreach whatsoever intended for commercial buildings using natural gas for heating and hot water. Overall, UGI's efforts to properly advise Palmer, or any of its other customers, of the hazard posted by a natural gas leak and how to respond to one left Palmer without the tools and information necessary to respond to the situation that arose on March 24, 2023.

4. UGI's failure to advise or warn Palmer of any need to evacuate while responding to 12 leaks at UGI piping and meters at Palmer buildings in the previous 30 months was strong negative reinforcement as to any need to evacuate on March 24, 2023.

UGI had five interactions with Palmer while repairing 12 natural gas leaks or gas odors at Palmer facilities. At no time during any of these interactions – for which Palmer did not conduct an evacuation – did UGI's technicians advise Palmer that it should have immediately evacuated in response to the odor of natural gas. If an evacuation is warranted any time natural gas odor is detected, UGI could have advised Palmer that it should have conducted an evacuation during each of these five interactions, but it did not do so. This negative reinforcement of having UGI address 12 leaks in just the 30 months prior to the accident without ordering or recommending an evacuation makes their investigation on the day of the explosion much more understandable.

5. Palmer owned no buried underground natural gas piping.

Palmer's use of natural gas in Building 2 was for limited heating and hot water. Its natural gas was supplied by UGI from UGI's underground natural gas piping to a UGI meter set located outside of Building 2. The natural gas piping under Cherry Street supplying gas to that meter was owned by UGI, not Palmer. Palmer does not own any buried, underground natural gas piping.

6. UGI was advised by Palmer of the location of the steam line at the time of its 2021 work to replace the meter set near Building 2.

When UGI unearthed the white powder as part of its 2021 work to relocate the Building 2 natural gas meter set, it inquired of Palmer as to assets that it may have had running underneath the street. Palmer specifically informed UGI of the steam line under Cherry

Street, and it was incumbent on UGI to perform its work with sufficient care to avoid any damage to the steam line or any other line or assets in the area.

Palmer Company's Proposed Recommendations

- 1. The NTSB should recommend to PHMSA that it explore the feasibility of removing and replacing Adyl A Polyurethane piping piping previously identified in 2007 by PHMSA as piping material with poor performance histories relative to brittle-like cracking.
- 2. The NTSB should recommend to PHMSA and the Pennsylvania PUC to require natural gas utilities to increase outreach and education to their business and commercial customers regarding the hazard of natural gas and to, as Palmer has already done, provide these customers with natural gas scratch-and-sniff cards and information for all of their customers' employees.