

# Burner Management Systems & Methane Capture

May 11, 2010

Presented by: **SureFire**  
Burner Management Systems

Technology Provider For:



## Burner Management Systems (BMS)

*“Provide an automatic method for controlling oil and gas process burners that improves safety, reduces emissions, and increases revenue. “*

## What a BMS Can Do

- Manages gas fired burners on process equipment
- Automatically lights burner
- Manages safety shutdowns
- Automatically manages burner fuel train
- Monitors temperature & process safety
- Provides real-time run status
- Integrates to PLC / RTU units onsite

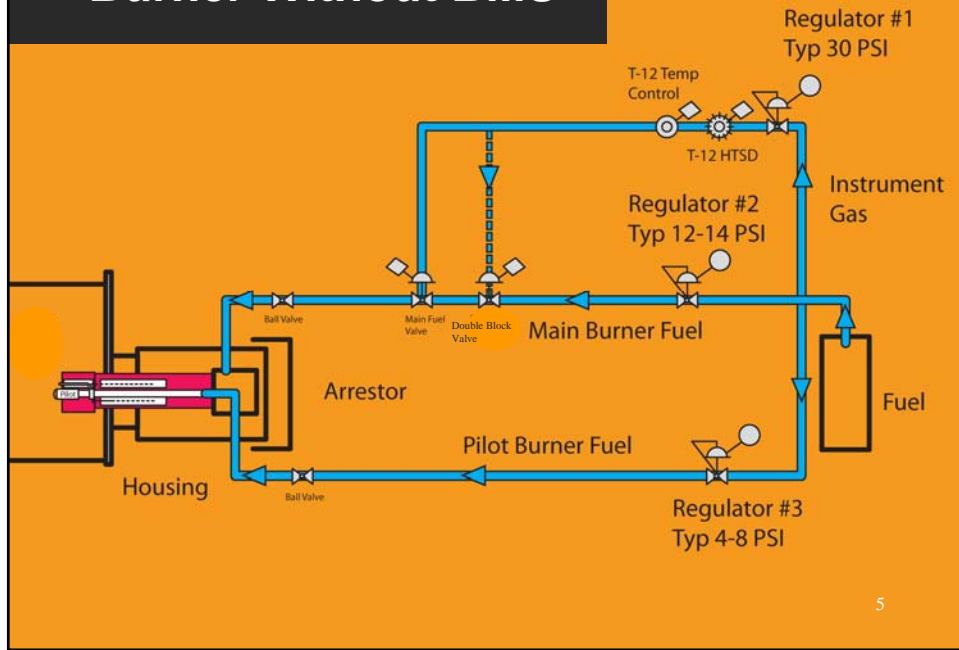
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## Applications

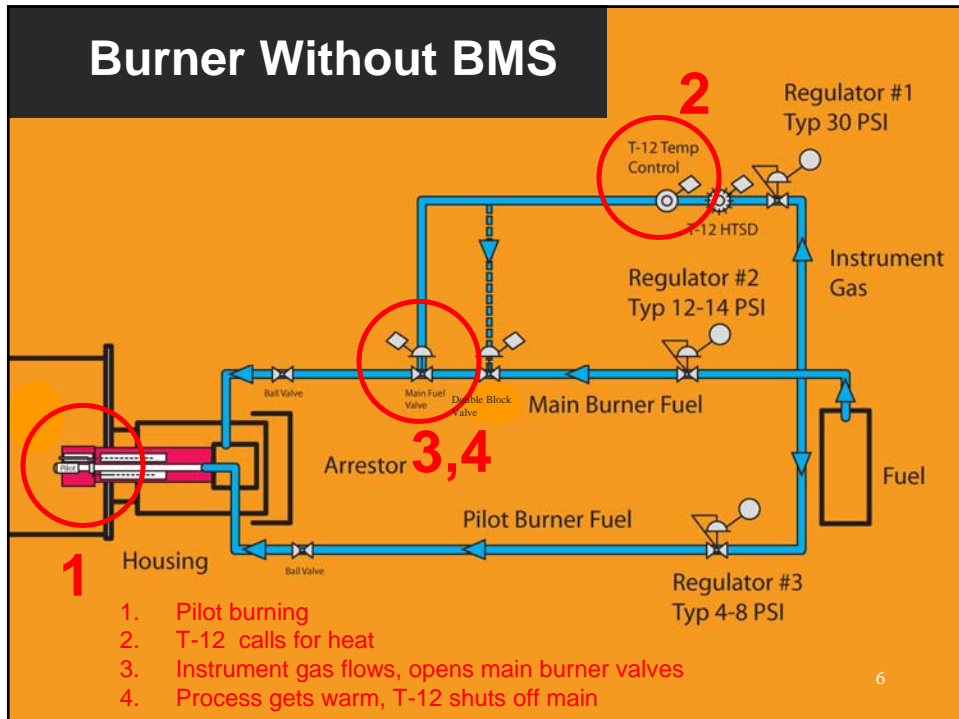
- Incinerators or Combustors
- Separators, Dehydrators, or Heaters
- Most Naturally Aspirated Industrial Burners to Ten Million Btu/hr
- Industry-Specific Equipment

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## Burner Without BMS

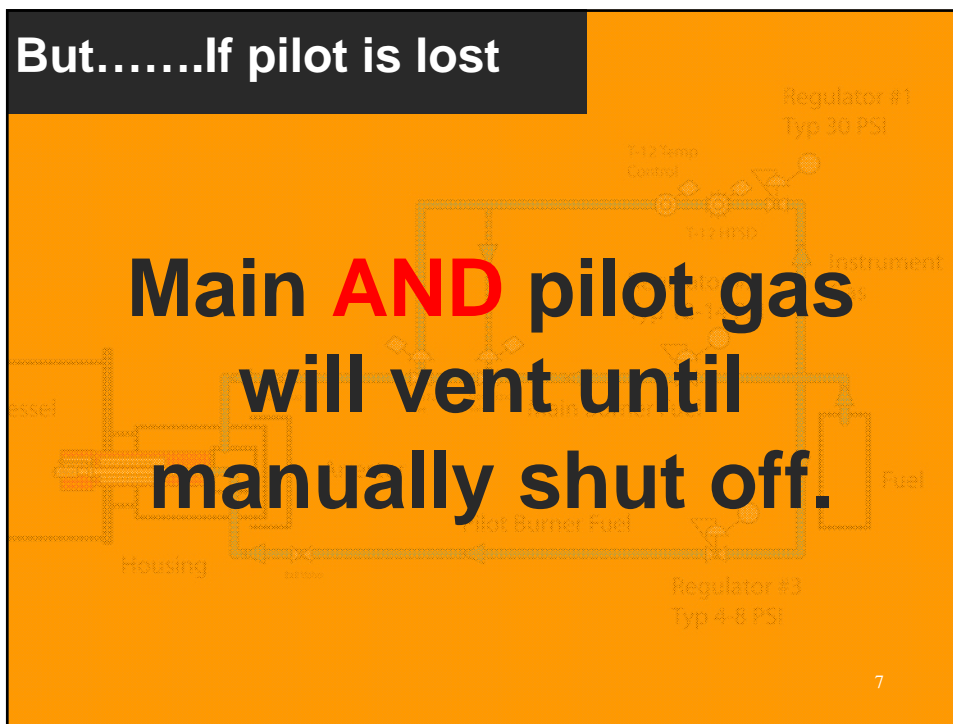


## Burner Without BMS



But.....If pilot is lost

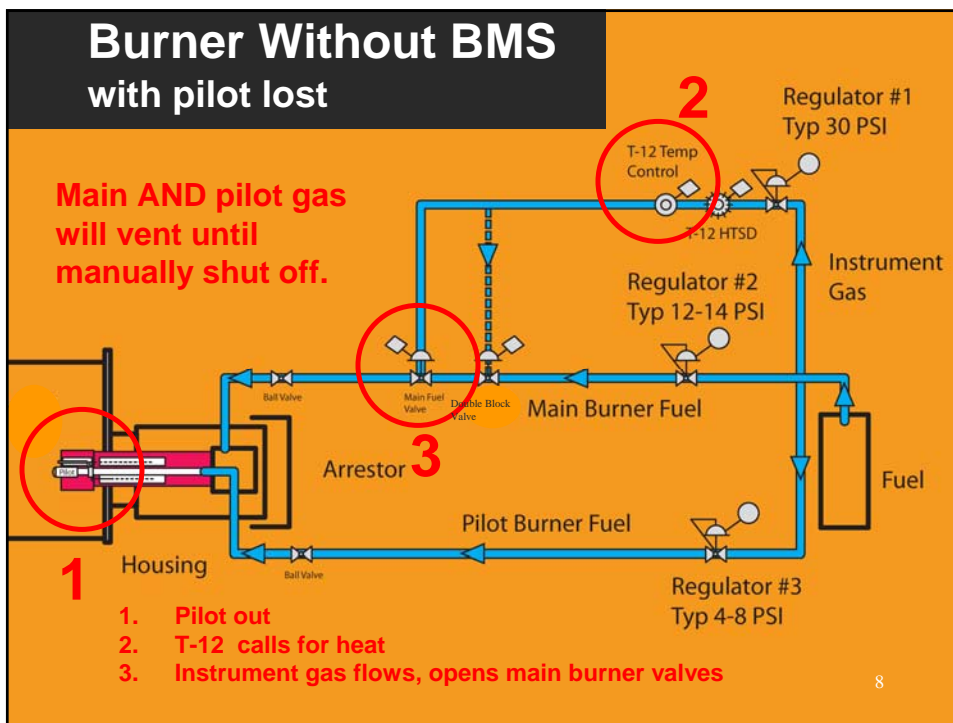
Main **AND** pilot gas  
will vent until  
manually shut off.



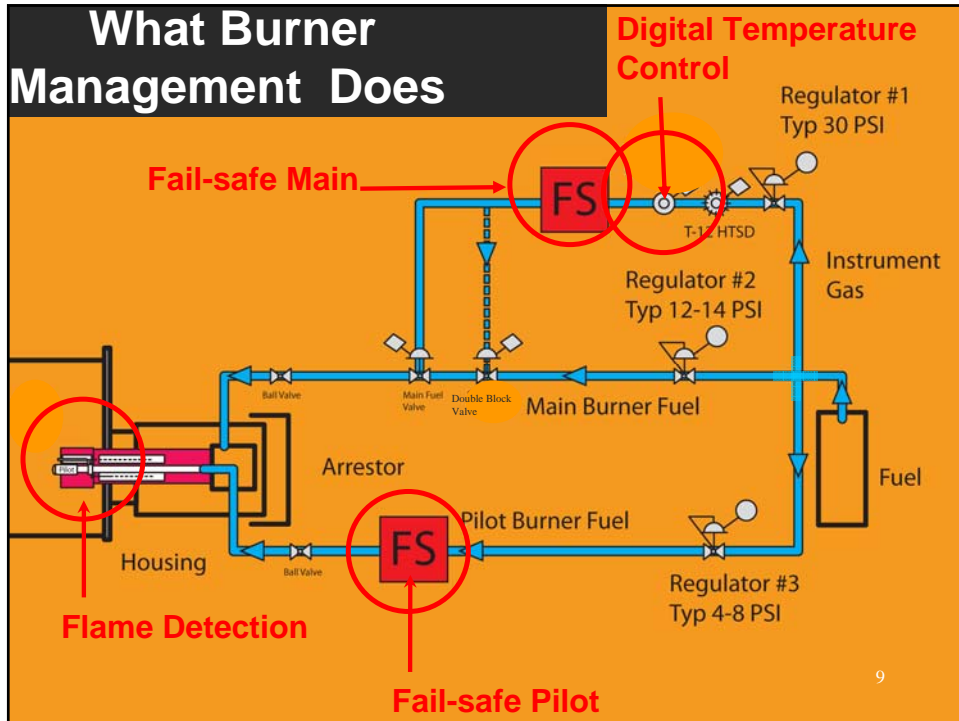
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Burner Without BMS  
with pilot lost

Main AND pilot gas  
will vent until  
manually shut off.



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## Economic Benefits of BMS

- Reduce methane vented during upsets
- Eliminate standing pilot fuel use
- Increase process efficiency
- Optimize lease operator time
- Eliminate third party re-lighting
- Reduce carbon tax exposure
- Verify run status for permitted sites
- Increase production & increase revenue

## BMS Economics: MCF & \$\$\$

Simple Example:

- Burner Flame Out ( # Days x mcf/d x # Burners)
- Standing Pilot ( # Days x mcf/d x # Burners)
- Contracted Re-lights ( # x \$75 x # Burners)
- Burner Down Production Loss ( mcf/d x # Days)

Estimated Payout for BMS implementation varies with Application and Gas Price

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## MCF/Cost/CO2E Data @ \$4.00/mcf

Methane *Vented* per Burner  
When Pilot Flame is Out

Burner Size (btu/hr rating)	CFH @14 psi	Orifice Size	MCF/H	Main MCF/D	Pilot MCF/D*	Sum Daily Fuel Savings	Days pilot is out	Yearly savings	Yearly CO2 Equivalent (lbs)	Yearly CO2 Equivalent (US Ton)
250,000	357	7/64"	0.357	8.568	1.68	\$40.99	3	\$122.98	11,498.02	5.75
500,000	730	5/32"	0.73	17.52	1.68	\$76.80	0	\$0.00	0.00	0.00
1,000,000	1,429	7/32"	1.429	34.296	1.68	\$143.90	0	\$0.00	0.00	0.00
2,000,000	2,915	5/16"	2.915	69.96	1.68	\$286.56	0	\$0.00	0.00	0.00

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## Annualized Example:

250,000 Btu Process Unit @ \$4.00/mcf  
 Each Burner Pilot Goes Out 3 Times / Year  
 No Burner Management System

# Burners	Blowout/Vented Gas – MCF & Cost	Pilot @ 5 Month Operation – MCF & Cost	Total – MCF & \$\$\$	Manual Relight @ \$75 per Relight	Total \$\$\$
1	30.74 mcf / \$122	252 mcf / \$1,008	282.74 mcf / \$1,130	\$75 x 3 = \$225	\$1,355
5	153 mcf / \$614	1,260 mcf / \$5,040	1413 mcf / \$5,654	\$75 x 15 = \$1,125	\$6,779
10	304 mcf / \$1,230	2,520 mcf / \$10,080	2,824 mcf / \$11,296	\$75 x 30 = \$2,250	\$13,546
100	3,074 mcf / \$12,296	25,200 mcf / \$100,800	28,274 mcf / \$113,096	\$75 x 300 = \$22,500	\$135,596
1,000	30,740 mcf / \$122,960	252,000 mcf / \$1,008,000	282,740 mcf / \$1,130,960	\$75 x 3000 = \$225,000	\$1,355,960

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## Benefits: Safety

- Take the torch out of your workers' hands
- Shut down and safely re-light with a button
- Simplified operational procedures / reduced reliance on gas detection equipment
- Fault detection and fail-safe architecture
- Control venting of raw gas on site
- Centralize control of ignition sources

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## Benefits: Environmental

- Reduce methane venting during burner upsets
- Reduce combustion emissions
- Increased efficiency = reduced emissions
- Verify operating history at permitted locations
- GHG management / reduce carbon footprint



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## SUMMARY: Burner Management Systems

- Improve safety
- Reduces burner related methane venting
- Decreases combustion emissions
- Increases gas sales
- Increases efficiency
- Lowers cost

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Work Safer  
Reduce Emissions  
Lower Costs

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