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General Comment

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Comment

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New §3.66, Weather Emergency Preparedness Standards

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Comments concerning proposed rulemakings
b.1. I recommend including "extended periods of low sunlight" to the definition, and revising the verbiage to: “(1) Critical component--Any component, including equipment rented or leased from a third party, that is susceptible to weather-related interruptions, such as those caused by freezing temperatures, freezing precipitation, extended periods of low sunlight, or extreme heat, the occurrence of which is likely to significantly hinder sustained operation of the gas pipeline or gas supply chain facility.” RATIONALE: Many locations have equipment that relies on a solar battery system for either its primary and sole power supply or as a backup system in case of a power outage. Examples include chemical injection systems and air compressors feeding instrument air systems. During extended periods of cloudy weather, these systems can fail due to lack of solar power. These systems are often critical components in the gas supply chain, and their failure could lead to equipment freeze offs and hydrate formation. It is very common for cloudy conditions to coincide with cold weather events (such as Winter Storm Uri) when the risk of hydrate formation and freeze offs is at its highest. I recommend that this language be modified to specifically call out this equipment as being susceptible to weather-related interruptions. c.2.D.vi. I recommend clarifying by adding "insulating, or actively heating" to this paragraph and revising the verbiage to: “(vi) enclosing, insulating, or actively heating sensors and other sensitive instruments for cold weather critical components;” RATIONALE: In many applications, enclosing a sensor or instrument is done in conjunction with other methods. For example, it is common for sensors and instruments to be placed in enclosures that are heated and/or insulated. I recommend changing

the language to be clearer and more consistent with industry practices. c.2.D.viii. and c.2.D.ix. I recommend adding the verbiage "or instrument gas" to these paragraphs and revising the verbiage to: “(viii) installing monitoring devices for cold weather critical components, including circuitry providing freeze protection or preventing instrument air or instrument gas moisture;” RATIONALE: Instrument gas systems, which provide pneumatic signals and control using natural gas rather than compressed air, are still extremely common in Texas and are more susceptible to freezing issues than instrument air systems. The language “instrument gas” should be included to make it clear that systems using gas rather than air are also part of this guidance in the rule. After c.2.D.viii. I recommend adding a new bullet to address the monitoring of freeze prevention and heating devices with the following verbiage: "installing monitoring devices for equipment installed to prevent hydrate formation or equipment freeze offs, including catalytic or infrared heaters, chemical injection systems, or heat tracing devices;" RATIONALE: When heating and freeze prevention devices are unmonitored, the first indication of a problem is often a failure of the equipment it was intended to protect. A site could follow the guidance in c.2.D.viii, get notification a critical component is failing, and then find their means of addressing the issue is not available. Monitoring the status of freeze prevention and heating equipment is much more likely to prevent a freezing issue than only monitoring the critical component itself. After c.2.D.ix. I recommend adding a new bullet to address confirming the operation of instrument air or instrument gas heating systems with the following verbiage: "confirming the operability of instrument air or instrument gas heating systems;" RATIONALE: An alternative to moisture prevention systems is heating the instrument air or instrument gas above dewpoint. (c.2.D.ix could also be modified to state “confirming the operability of instrument air or instrument gas heating and moisture prevention systems.”) After c.2.D.x. I recommend addressing the use of catalytic and infrared heating in this guidance with a new bullet with the following verbiage: "installing catalytic or other infrared heating systems to raise the

temperature of gas above dewpoint to prevent hydrate formation and freeze offs of equipment; " RATIONALE: Catalytic infrared heating is universally accepted in the oil and gas industry as an acceptable method of heating gas upstream of sensitive equipment. Manufacturers of pressure and flow control equipment such as Kimray, Emerson, and Baker Hughes identify preheating gas with catalytic heating as a best-practice for preventing freezing in their equipment. Because it requires electricity only for a few minutes during startup (and this electricity is often provided via battery from a vehicle or solar system), catalytic heating is widely used in remote locations that have no electricity on site. It is also widely used where electrical supply is susceptible to disruption. Sites like these are at very high risk of freezing because methods that require consistent, reliable electricity like electric chemical injection, compressed air, and electric heat trace is either unavailable or unreliable. Since other common technologies are named specifically (heat tracing, chemical injection, moisture removal), catalytic and other infrared heating systems should also be mentioned to avoid any confusion as to whether they are acceptable methods of freeze prevention. This common practices should be included in this guidance. After c.2.D.x. I recommend addressing direct heating of equipment using catalytic or infrared heating by adding a new bullet that uses the following verbiage: "installing catalytic or other infrared heating systems to directly heat equipment susceptible to hydrate formation and freeze offs;" RATIONALE: Direct catalytic or infrared heating of equipment (rather than heating the gas upstream of the equipment) is a widely used method for preventing hydrate formation and equipment freeze offs. This methodology is recommended by major manufacturers of pressure and flow control equipment such as Kimray, Emerson, and Baker Hughes. This common practice should be included in this guidance. After d.1.B.iii. I recommend specifically addressing the protection of pressure and flow control equipment with a new bullet that has the following verbiage: "gas pressure and flow control equipment;" RATIONALE: Gas pressure and flow control devices, such as regulators, chokes, and other types of valves that are often critical to gas production and transportation,

are particularly susceptible to the Joule-Thomson Effect. This effect causes a significant drop in temperature when the gas pressure is reduced (approximately 7 degrees Fahrenheit for every 100 psi). The effect can be so profound that it often causes freeze offs even in warm weather. The risk of freeze offs becomes considerably greater in low ambient temperatures (as were observed during Winter Storm Uri). Gas pressure and flow control devices that would normally not experience a freeze off due to the Joule-Thomson Effect become significant freeze off risks if not protected. d.1.b.v. I recommend changing this bullet to read: "(v) instrument air or instrument gas management;" RATIONALE: Instrument gas systems, which provide pneumatic signals and control using natural gas rather than compressed air, are still extremely common in Texas and are more susceptible to freezing issues than instrument air systems. The language “instrument gas” should be included to make it clear that systems using gas rather than air are also part of this guidance in the rule.

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