Wildfire Mitigation Plan

Updated November 2025

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Black Hills Energy

Executive summary

Black Hills Energy[1] has safely and reliably served our customers since 1883. Throughout this time, and across our service territories, our teams have managed the wildfire risk associated with operating an electric utility. Presently, electric utilities, including Black Hills Energy, are assessing how the environment, human population growth and development, and aging infrastructure contribute to their company-specific wildfire risks. We reviewed potential wildfire risks in our electric service territories by conducting asset-based risk modeling. This modeling targeted mitigation activities to reduce the potential for utility equipment-caused wildfires. Our risk assessments use datasets available through wildfirerisk.org (WRO). These datasets were created by the United States Forest Service, in partnership with multiple federal agencies, and at the direction of Congress. The purpose of these datasets is to help elected officials, community planners and fire managers understand how risk varies across a region and how to prioritize actions to mitigate risk.

The insights provided by these risk assessments enable our teams to identify and prioritize the mitigation opportunities that most significantly reduce risk. The table below provides a summary of our total circuit miles and circuit-miles in high-fire risk areas. As of Dec. 31, 2024, Black Hills Energy had approximately 23% total circuit-miles across our three electric utilities in high-fire risk areas, 32% of which are underground distribution lines.

Asset type	Approximate total circuit-miles	Circuit-miles in high-fire risk areas
Transmission	1,977	327
Distribution overhead	4,931	1,097
Distribution underground	2,289	657
Total	**9,197**	**2,081**

Table 1: Approximate line miles by in areas of high-fire risk. All transmission lines are overhead and include lines that operate at 69kV (sub-transmission) and higher.

As a result of these assessments, Black Hills Energy, in conjunction with third-party industry consultants, developed a Wildfire Mitigation Plan (WMP) which describes the programs we employ in an effort to mitigate wildfire risk. The primary objective of our WMP is to promote public safety and reduce the risk of utility infrastructure-caused wildfires by minimizing the likelihood that electrical equipment will ignite a fire. Our WMP is also designed to mitigate the potential severity of a wildfire if one occurs. The programs and initiatives described in this WMP are designed to reduce ignition potential and ignition event frequency associated with our electric facilities.

1. The reference to Black Hills Energy in this document is intended to refer to Black Hills Corporation's three electric utility operating companies Black Hills Power, Inc., Cheyenne Light, Fuel and Power Company and Black Hills Electric Colorado, LLC.

Three-layered approach

Our wildfire risk mitigation strategies are supported by a three-layered approach that includes Asset Programs, Integrity Programs and Operational Response.

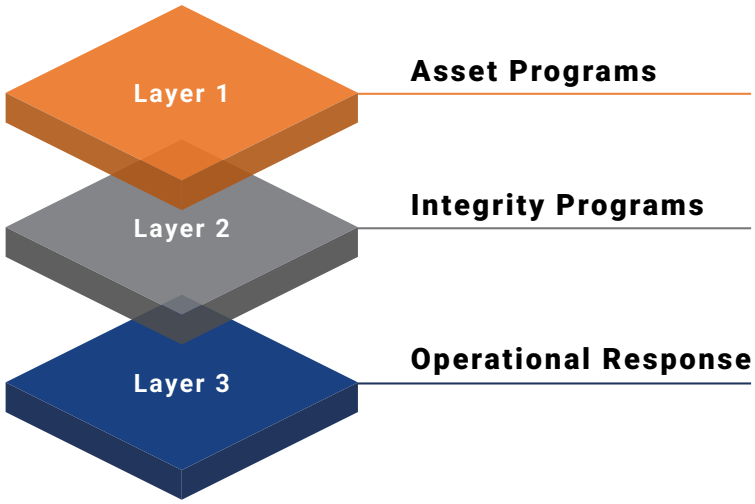

Figure 1: Asset-based risk assessments

Some of the key components of this WMP include:

- Operational procedures to disable automatic reclosing and restrict work activities based on wildfire risk conditions.
- Situational Awareness (SA), including access to a five-day fire-weather forecast from a contracted weather service which maintains its own weather stations and meteorological staff.
- Clear policies and procedures that formalize asset program execution and identify metrics.
- An Emergency Public Safety Power Shutoff (PSPS or Emergency PSPS) program.

Our wildfire mitigation strategies and programs will evolve as we continuously learn and improve. As such, we may implement programmatic changes or revise this plan as new practices and technologies develop or as environmental conditions, trends or risks warrant updates. We will continue to communicate our efforts to ensure coordination with customers; Offices of Emergency Management (OEMs); communities; entities such as first response providers — including fire protection districts, county sheriffs and local police departments (Public Safety Partners); regulators and other stakeholders.

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1.0

Introduction

Black Hills Energy is a customer-focused, growth-oriented utility company headquartered in Rapid City, South Dakota. Our three electric utilities subsidiaries operate under the Black Hills Energy name and generate, transmit and distribute electricity to approximately 225,000 electric utility customers in Colorado, South Dakota, Wyoming and Montana (Figure 2). The operating companies included in this plan are Black Hills Colorado Electric, LLC (BHCOE or Colorado Electric), Black Hills Power, Inc. (Black Hills Power or South Dakota Electric) and Cheyenne Light, Fuel and Power Company (Cheyenne Light or Wyoming Electric).

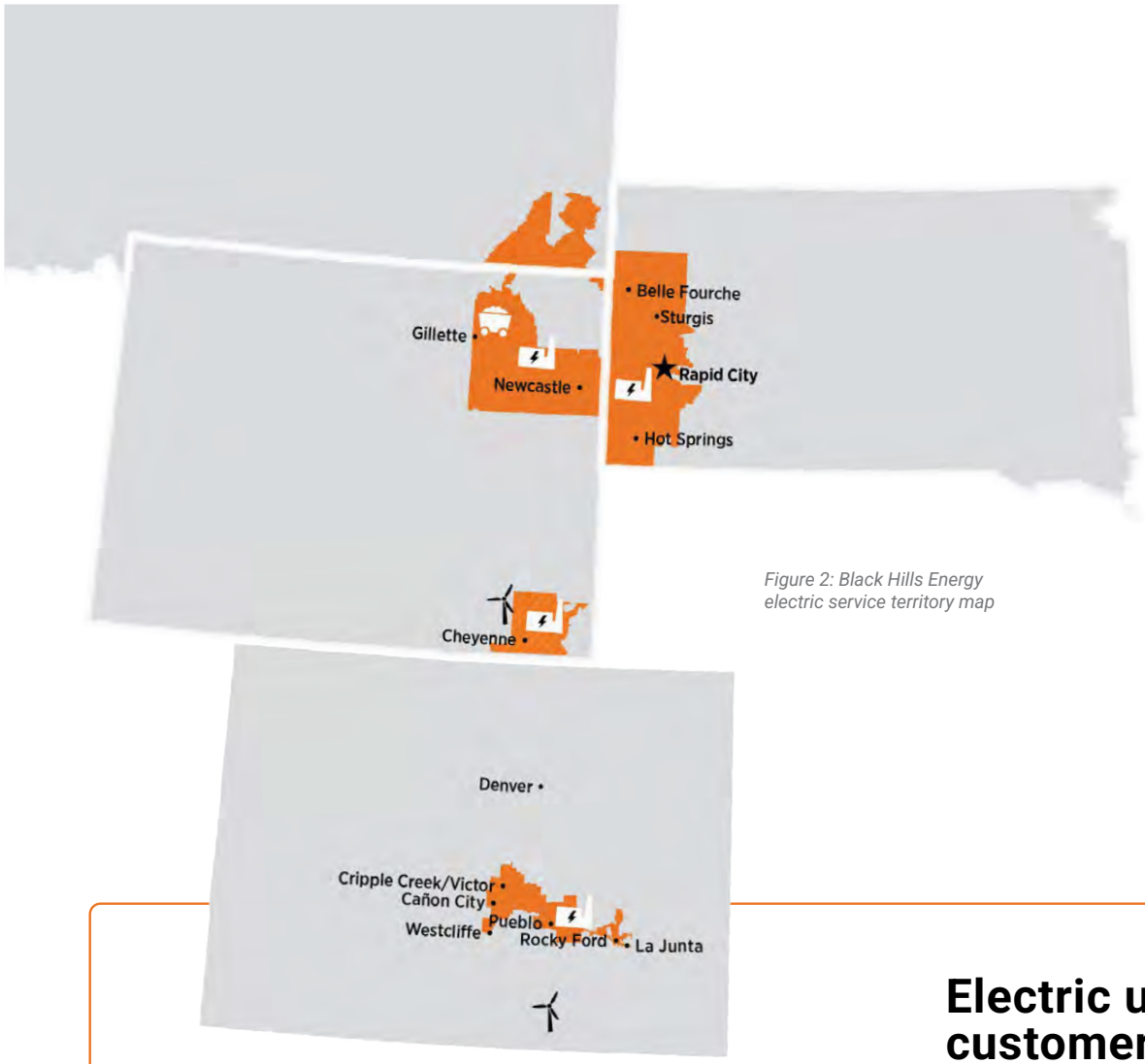


Figure 2: Black Hills Energy electric service territory map

Electric utility customers

~77,900

South Dakota Electric
Black Hills Power

Notable communities served:
- Rapid City
- Sturgis
- Hot Springs
- Belle Fourche
- Newcastle, WY
- Piedmont
- Belle Creek, MT

~45,700

Wyoming Electric
Cheyenne Light

Notable communities served:
- Cheyenne

~101,400

Colorado Electric
BHCOE

Notable communities served:
- Pueblo
- Cañon City
- Rocky Ford

1.1 Plan objectives

The primary objective of our WMP is to promote public safety and mitigate the risk of utility infrastructure-caused wildfires. Our WMP is also designed to mitigate the potential severity of any wildfire that does occur. The programs and initiatives described in this WMP are designed to reduce ignition potential and ignition event frequency associated with our electric facilities.

To support the integrity of our energy delivery systems, we design, construct, maintain and operate our electric infrastructure in a manner that minimizes the risk of wildfire ignition. By incorporating industry practices into our standards, operating procedures and education, we are committed to a fire safe culture across our company and in our communities.

1.2 General wildfire risks

Threats resulting from a changing environment, declining forest health and increased human population development in wildland areas (the Wildland Urban Interface, or WUI) are drivers that make preventing wildfires a top priority for Black Hills Energy. The sections below describe industry-wide wildfire risk considerations.

1.2.1 Environment

For the past several decades, changing environmental conditions have intensified the factors that contribute to fire conditions in the western United States (U.S.). The western U.S. has experienced a trend of increasing air temperatures, lower precipitation and earlier snowmelt, which has led to drier forests and fuels as well as a longer fire season (Shafer et al., 2014).

These same environmental impacts have contributed to increased forest pest infestations, which cause tree death in the forests and woodlands of the western U.S., including our service territories in Colorado, South Dakota, Wyoming and Montana. Changing rain and snow patterns, shifts in plant communities and other environmental-related changes, combined with forest management practices and decades of fire suppression policies have increased the likelihood that fires may start more often and burn more intensely and widely than they have in the past.

Forest fire activity increased abruptly beginning in the mid-1980s. Figure 3 is based on data provided by National Interagency Coordination Center at NIFC and illustrates that the annual total acres burned have increased over the period between 1983 to 2024 (NIFC, 2025).

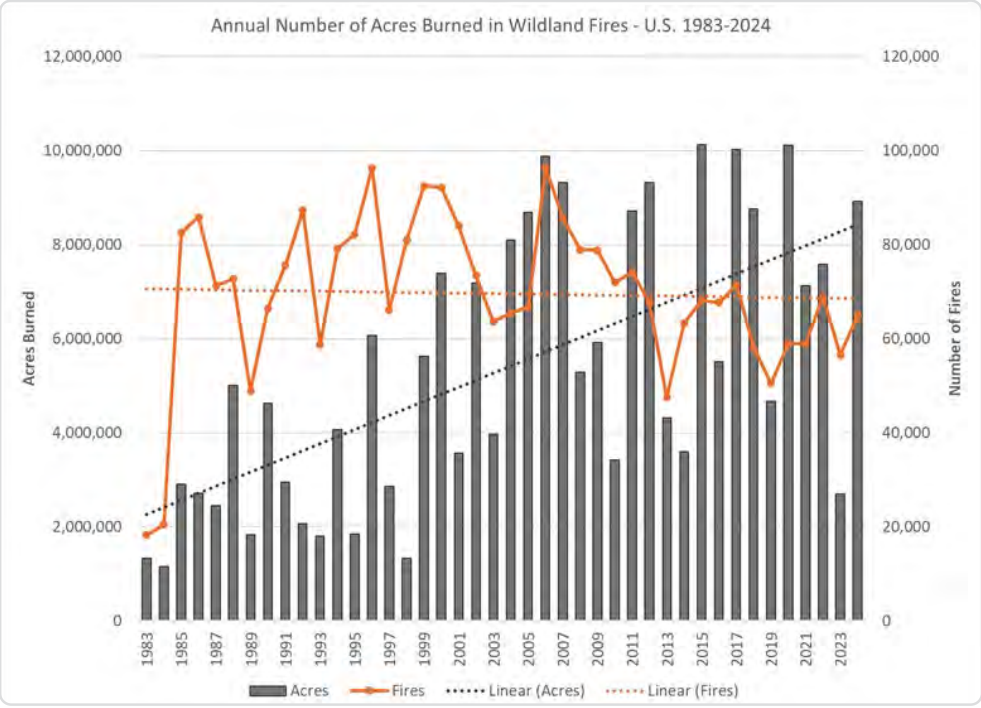


Figure 3: Increased size of wildfires and total acres burned, 1983-2024

1.2.2 Human population growth and development

The WUI is characterized by the intersection of the natural and the built environments and has been defined as the area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (Stewart et al., 2007). When humans build and develop close to forests or other types of natural vegetation, several wildfire-related challenges may occur. With increased human presence and use of the land, there is an increased likelihood of human-caused ignitions. Further, when wildfires occur within the WUI, there is a greater risk to lives and homes, escalating the risk of higher physical damage and financial consequences. Finally, wildfires within the WUI can be more difficult to fight and allowing a fire to safely burn its course may no longer be an option.

Fire has played a significant role in ecosystem dynamics throughout the Rocky Mountains and tall grass prairies of the U.S. It has the potential to change from a relatively benign facet of nature to a problematic force when it interacts with lives, livelihoods and infrastructure.

Fires in various locations have different impacts. To identify where a fire might cause the greatest impact on human life and property, it is important to first understand the probable consequences of the fire. When population densities increase, the consequences of wildfire can be significant. Our approach to risk assessment relies on predictions of how fires will respond to the combustible nature of a given landscape and couples that information with local, cultural, environmental and human resources plus existing infrastructure to determine the areas of highest concern for fire prevention.

Black Hills Energy used a variety of factors to evaluate and quantify wildfire risk. The data, information, resources and processes used as the basis for our approach are described in Section 2.

1.2.3 Aging infrastructure

In the 2024, “Black & Veatch Strategic Directions: Electric Report” (Black & Veatch, 2024) survey, respondents ranked aging infrastructure as tied with renewable integration for the most challenging issue facing the electric industry today. For this reason, Black Hills Energy implements inspection, repair and replacement programs as part of its normal course of business in areas of heightened wildfire risk. Risk analysis may drive the acceleration and prioritization of work in some areas.

1.3 Asset summary

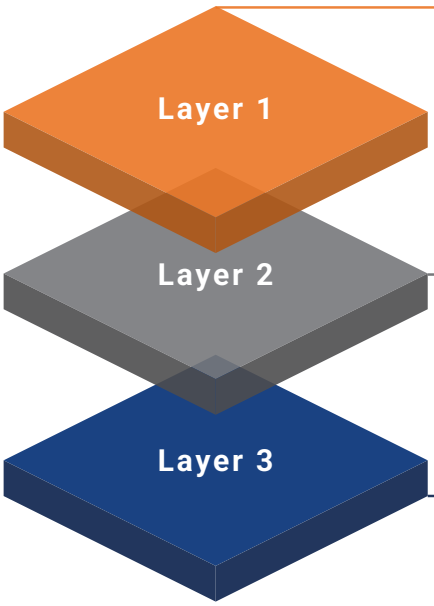
Black Hills Energy owns and operates generation, transmission, substation and distribution assets across all its electric service territories. Our electric utilities own approximately 9,200 miles of electric transmission and distribution lines. A portion of these assets are physically located in high-fire risk areas as illustrated in Table 2. However, approximately 32% (657 of the 2,081) of the line miles located in areas of high-fire risk areas are underground facilities. High-fire risk refers to areas within our service territories classified as “High” or “Very High” as described in Section 2.1.1.

Asset	Total circuit-miles	Circuit-miles in elevated fire risk
South Dakota Electric (BHP)		
Transmission	1,234	271
Distribution overhead	1,728	841
Distribution underground	896	475
Wyoming Electric (CLFP)		
Transmission	88	0.19
Distribution overhead	843	16
Distribution underground	531	2
Colorado Electric (COE)		
Transmission	655	56
Distribution overhead	2,360	240
Distribution underground	862	180
Total	**9,197**	**2,081**

Table 2: Approximate line miles by operating company in areas of high-fire risk. All transmission lines are overhead and include lines that operate at 69kV (sub-transmission) and higher.

1.4 Our approach

Our wildfire risk mitigation strategies are supported by a three-layered approach, driven by asset-based risk assessments (Section 2), that are incorporated into our Asset Programs (Section 3), Integrity Programs (Section 4) and Operational Response (Section 5).



Asset Programs

We conduct proactive equipment inspections and repairs and utilize maintenance practices that include vegetation management within our rights of way, electric power line patrols (air and ground), in addition to power pole inspections and replacement.

Integrity Programs

We make system investments aimed at improving reliability and reducing risk, undergrounding electric distribution lines and applying construction standards that reduce the likelihood of wildlife interactions with facilities.

Operational Response

We use situational awareness tools to make risk-driven decisions during specific weather conditions, including: system reconfigurations, adjusted daily work activities, equipment operation (non-reclosing energized power lines) and potential Emergency Public Safety Power Shutoffs.

Figure 4: Black Hills Energy's three-layered wildfire risk mitigation strategy

Asset Programs focus on preventative activities, including repair and maintenance practices, vegetation management, line patrol (air and ground) and pole inspections and replacement. Understanding the condition of our assets and implementing timely remediation of identified hazards reduces wildfire risk. Asset Programs are covered in greater detail in Section 3.

Integrity programs focus on system investments and are aimed at improving reliability and reducing risk through undergrounding electric distribution lines, where reasonable and feasible, and applying construction standards that reduce the likelihood of wildlife interactions with facilities. Integrity Programs are covered in greater detail in Section 4.

Operational Response supports risk-driven decisions, including system reconfigurations, adjustment of daily work activities, modified equipment operation (non-reclosing energized power lines) and leveraging fire forecasting tools to enhance our team's situational awareness and better understand and appreciate potentially hazardous conditions. Our operational response also includes an Emergency PSPS as a last resort safety measure to mitigate the risk of electric facilities becoming a source of ignition. Operational Response is covered in greater detail in Section 5.

2.0

Specific wildfire risk assessments

Black Hills Energy has conducted extensive asset-based risk assessments. This section describes those risk assessments and how they contribute to a comprehensive view of wildfire risk, thereby allowing our teams to target mitigation activities that most significantly drive down wildfire risk.

- **Publicly available wildfire risk assessments:** Publicly available risk assessments can be helpful to identify wildfire risk beyond Black Hills Energy's service territory and throughout the continental United States. Black Hills Energy uses data from these publicly available sources to support our risk assessment process.
- **Service territory level:** Hazardous Fire Areas (HFAs), which are used to geospatially visualize wildfire risk and prioritize the various fire hardening projects and ignition reduction strategies contained in this WMP.
- **Circuit level:** Risk-based ranking of all distribution circuits throughout our service territories. The results are used to identify and prioritize circuit level risk reduction opportunities, including non-reclosing activities, and asset programs work among circuits.
- **Pole level:** Per-pole risk assessment. The results allow for targeted risk reduction at an individual pole level.

2.1 Publicly available wildfire risk assessments

Publicly available wildfire risk assessments can serve as a useful tool to identify wildfire risk across the continental United States. This section describes two specific resources that we reference as part of our wildfire risk assessment.

2.1.1 Federal Emergency Management Agency maps

The Federal Emergency Management Agency (FEMA) wildfire map is a commonly referenced map for wildfire mitigation purposes. FEMA developed maps that show a Wildfire Risk Index score and rating. This score represents a community's relative risk for wildfires when compared to the rest of the United States. A Wildfire Expected Annual Loss score and rating represents a community's relative level of expected building and population loss each year due to wildfires when compared to the rest of the United States. Black Hills Energy considered FEMA mapping as part of its development of more granular risk mapping for high-risk fire areas within its service territories.

2.1.2 Wildfirerisk.org maps

Another publicly available resource is Wildfire Risk to Communities' website wildfirerisk.org (WRO). The website includes an interactive mapping feature intended to help communities understand, explore and reduce wildfire risk. WRO breaks down wildfire risk into four categories: Risk to Homes, Wildfire Likelihood, Exposure and Vulnerable Populations. The WRO website provides detailed descriptions for each risk category.

WRO's risk categories provide users with an opportunity to take a deeper dive into the different factors that impact wildfire risk at a level appropriate for community awareness. However, at Black Hills Energy, we require a more holistic representation of risk to make operational and strategic decisions associated with operating an electric utility. Although we do not use the WRO resources and interactive maps directly, Black Hills Energy leverages the same datasets used by WRO to develop our own risk assessments as described below in Section 2.2.

2.2 Service territory level (Hazardous Fire Areas)

To efficiently assess wildfire risk across a complex electric network, Black Hills Energy has developed a geospatial representation of wildfire risk throughout our service territories allowing for data-informed, risk-based decisions. The publicly available wildfire risk resources referenced in Section 2.1 are useful for general information but do not provide a holistic representation of wildfire risk that would ultimately meet the needs of our business. As further described in Section 2.2.1, Black Hills Energy conducted service territory specific risk assessments utilizing the same datasets as WRO. This effort produced a geospatial risk representation, from which our Hazardous Fire Areas (HFA) categorizations were developed.

The HFA categories are a primary driver for various engineering and operational decisions. Below are a few examples:

- Guiding the location and design of future transmission, distribution, substation and communication facilities to avoid HFAs or for undergrounding distribution lines when appropriate.
- Establishing construction standards and materials to reduce systemic ignition sources.
- Focusing our system integrity efforts on rebuilds, retrofits and relocation projects to reduce risk.

Five HFA adjective classes (Very Low, Low, Moderate, High and Very High) are used to categorize wildfire risk across our service territory. The development of these adjective classes is determined based on the following three steps:

Figure 5: Three step approach to HFA adjective classes.

2.2.1 HFA data collection

Black Hills Energy utilized datasets that originate from WRO as a platform for the development of our HFA categorizations. These WRO datasets were created by the U.S. Forest Service, in partnership with other federal agencies to provide guidance and mitigation prioritization assistance to various organizations, including utilities. The WRO dataset is built from nationally recognized data, including:

- Vegetation and fire-behavior fuel models from the interagency LANDFIRE program.
- Topographic data from the United States Geological Survey.
- Historical weather patterns from the National Weather Service.
- Long-term simulations of large wildfire behavior from the USDA Forest Service.
- Community data from U.S. Census Bureau and Department of Energy.

2.2.2 HFA criteria analysis

Black Hills Energy partnered with an external consultant to perform the data analysis necessary to progress from the more generalized WRO dataset to a geospatial representation of wildfire risk. The team assessed five criteria as part of its data analytics, including: Conditional Flame Length (CFL), Risk to Potential Structures (RPS), Burn Potential (BP), Wildfire Hazard Potential (WHP) and Housing Unit Risk (HU). A description of the risk criteria and data tables used as part of the analysis is included below.

Conditional Flame Length (CFL): Most likely flame length at a given location if a fire occurs, based on all simulated fires. CFL is used in assessing potential wildfire intensity.

Values	Legend Labels	Color	Rank	Query
Conditional Flame Length	Flame Length (feet)			
0	NA		0	CFL_1 = 0
≤ 2	0 to 2 feet		Low	CFL_1 <= 4
≤ 4	2 to 4 feet			
≤ 6	4 to 6 feet		Moderate	CFL_1 > 4 AND CFL_1 <= 8
≤ 8	6 to 8 feet			
≤ 12	8 to 12 feet		High	CFL_1 > 8 AND CFL_1 <= 20
≤ 20	12 to 20 feet			
> 20	> 20 feet		Very High	CFL_1 > 20

Table 3: Conditional Flame Length

Risk to Potential Structures (risk to homes) (RPS): A measure that integrates wildfire likelihood and intensity with generalized consequences to a home on every pixel. For every place on the landscape, it assesses the relative risk to a house if one existed at that location.

Values	Legend Labels	Color	Rank	Query
RPS Index	Percentiles (relative to US)			
0	0		0	RPS_1 <= 0
≤ 0.011492	0 to 40th		Very Low	RPS_1 > 0 AND RPS_1 <= 0.011492
≤ 0.098198	40th to 70th		Low	RPS_1 > 0.11492 AND RPS_1 <= 0.098198
≤ 0.407671	70th to 90th		Moderate	RPS_1 > 0.098198 AND RPS_1 <= 0.407671
≤ 0.700043	90th to 95th		High	RPS_1 > 0.407671 AND RPS_1 <= 0.700043
≤ 11.967653	95th to 100th		Very High	RPS_1 > 0.700043

Table 4: Risk to Potential Structures

Burn Potential (BP): The annual probability of wildfire burning in a specific location.

Values	Legend Labels	Color	Rank	Query
Annual Probability of Wildfire	1-in-X Chance of Fire in Any Year			
0	0			
≤ 0.0001000	0 to 1-in-10,000			
≤ 0.0002154	1-in-10,000 to 1-in-4,643		Low	BP_C >= 0 AND BP_C <= 0.0010000
≤ 0.0004642	1-in-4,643 to 1-in-2,154			
≤ 0.0010000	1-in-2,154 to 1-in-1,000			
≤ 0.0021544	1-in-1,000 to 1-in-464			
≤ 0.0046416	1-in-464 to 1-in-215		Moderate	BP_C >= 0.0010000 AND BP_C <= 0.0100000
≤ 0.0100000	1-in-215 to 1-in-100			
≤ 0.0215443	1-in-100 to 1-in-46			
≤ 0.0464159	1-in-46 to 1-in-22		High	BP_C >= 0.010000 AND BP_C <= 0.0464159
≤ 0.1300000	1-in-22 to 1-in-8		Very High	BP_C > 0.0464159

Table 5: Burn Potential

Wildfire Hazard Potential (WHP): An index that quantifies the relative potential for wildfire that may be difficult to control. WHP is used as a measure to help prioritize where fuel treatments may be needed.

Values	Legend Labels	Color	Rank	Query
WHP - 5-Class Percentile-Based Legend				
WHP Index	Wildfire Hazard Potential Class			
0	NA		NA	WHP_2 <=0
≤ 61	Very Low		Very Low	WHP_2 > 0 AND WHP_2 <= 61
≤ 178	Low		Low	WHP_2 > 61 AND WHP_2 <= 178
≤ 489	Moderate		Moderate	WHP_2 > 178 AND WHP_2 <= 489
≤ 1,985	High		High	WHP_2 > 489 AND WHP_2 <= 1,985
≤ 100,000	Very High		Very High	WHP_2 > 1,985

Table 6: Wildfire Hazard Potential

Housing Unit Risk (HU): An index that integrates all four primary elements of wildfire risk – likelihood, intensity, susceptibility and exposure – on pixels where housing unit density is greater than zero. It is conceptually similar to Risk to Potential Structures (i.e., risk to homes) but also incorporates housing unit count.

Values	Legend Labels	Color	Rank	Values	Query
HU Risk	**Housing Unit Risk**				
≤ 20,000,000	> 100,000		Very High	> 100,000	HURisk_CONUS > 100,000
≤ 100,000	10,001 - 100,000		High	>10,000 and ≤ 100,000	HURisk_CONUS > 1,000 AND HURisk_CONUS <= 100,000
≤ 10,000	1,001 - 10,000				
≤ 1,000	101 - 1,000		Moderate	>10 and ≤ 10,000	HURisk_CONUS > 10 AND HURisk_CONUS <= 1,000
≤ 100	11 - 100				
≤ 10	2 - 10		Low	>2 and ≤ 10	HURisk_CONUS > 2 AND HURisk_CONUS <= 10
≤ 1	1		Very Low	>0 and ≤ 1	HURisk_CONUS >=1 AND HURisk_CONUS <2
0	0		0		HURisk_CONUS = 0

Table 7: Housing Unit Risk

2.2.3 HFA weighted scoring methodology

As referenced previously, a holistic assessment of wildfire risk areas is appropriate. To achieve this, the criteria referenced in Section 2.2.2, are aggregated through a weighted scoring methodology. This approach provides an analytical focus on strategic wildfire hazards and threats, and allows our teams to categorize, at a granular level, wildfire risk across our service territory. This process allows wildfire risk to be quantified as a single value as compared to a collection of values across several criteria. An example of the data used is included below along with the resulting adjective class thresholds.

Black Hills Energy used the results of this process and built a refined geographical representation of wildfire risk across our service territories. This risk assessment is specific to Black Hills Energy and our service territories and provides the appropriate level of awareness and insight to make data-informed, risk-driven decisions.

	Base Hazard Rating		Uprate section to better value utility wildfire hazards										Comparison Values	2021 WRO Runs	
	WHP		BP		CFL		RPS		HU Risk		Landscape Wildfire Hazard Rating 2021 WRO		2019 HFA Rating	2021 Avg Day	2021 Bad Day
Values	1 thru 5		1 thru 10		Actual FL		1 thru 5		1 thru 5						
Combing Process											Final Weighted Value	Text Value	Text Value	Text Value	Text Value
Acres Value		20		2		3		7		3	35	High	Very High	High	Very High
	Rank	Weight	Rank	Weight	Rank	Weight	Rank	Weight	Rank	Weight					
	NA	0					NA	0	NA	0					
	Very Low	3			CFL Bad Day (2)		Very Low	7	Very Low	3					
	Low	8	Low	0	Low	6	Low	12	Low	5					
	Moderate	15	Moderate	2	Moderate	8	Moderate	15	Moderate	8					
	High	20	High	4	High	10	High	20	High	10					
	Very High	25	Very High	5	Very High	12	Very High	25	Very High	12					
											Total Scoring		Jenks Scoring		
					CFL Average Day (1)						79		New HFA Hazard Scoring		
					Low	1								NA	0
					Moderate	3								Very Low	22
					High	7								Low	30
					Very High	10								Moderate	37
	[WHP_Weight] + [BP_Weight] + [CFL_Weight1a] + [RPS_Weight] + [HU_Weight]								FinalWeight1a = Average Day					High	46
	[WHP_Weight] + [BP_Weight] + [CFL_Weight2a] + [RPS_Weight] + [HU_Weight]								FinalWeight2a = Bad Day					Very High	47

Table 8: Example weighted scoring calculation

The following figures illustrate the HFA categorization resulting from the weighted scoring process:

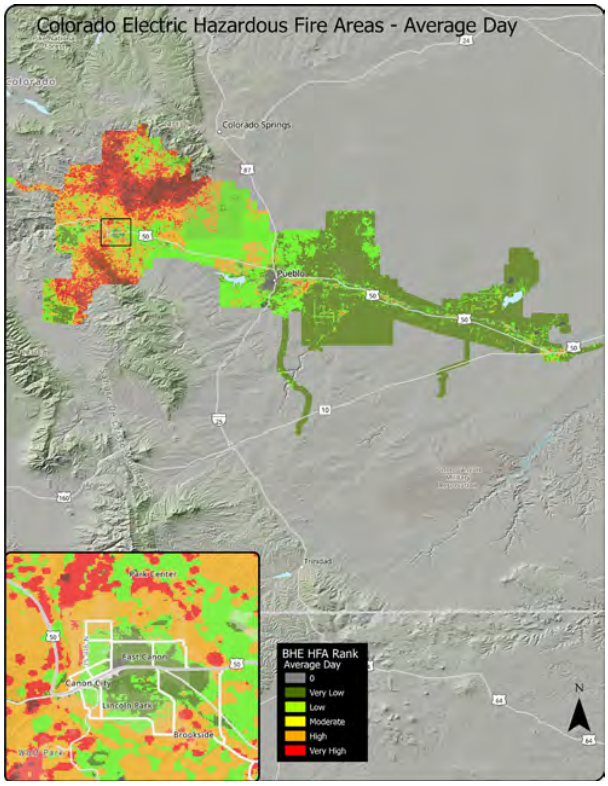


Figure 6: Colorado Electric HFA assessment map (2021)

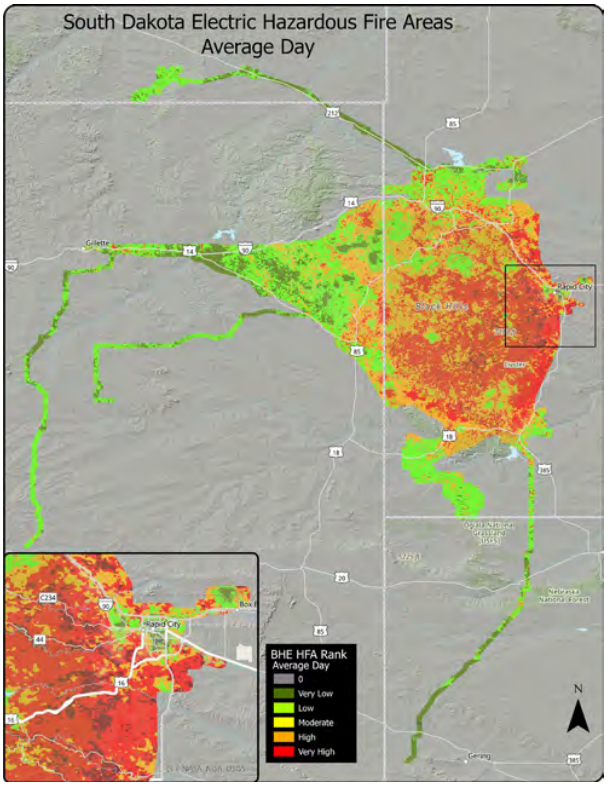


Figure 8: South Dakota Electric HFA assessment map (2021)

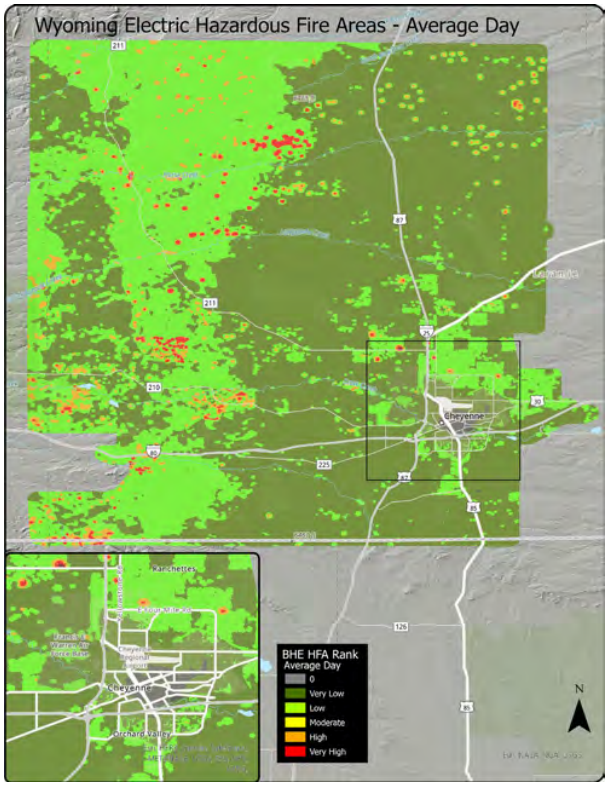


Figure 7: Wyoming Electric HFA assessment map (2021)

2.3 Circuit level

In addition to the HFA assessments described in Sections 2.1 and 2.2, Black Hills Energy prioritizes wildfire mitigation activities at a circuit level. Unlike the previously described assessments, the circuit level assessment does not result in a geospatial representation of wildfire risk. Instead, the result is a stacked ranking of distribution circuits. Several factors are considered as part of the circuit level assessment, including:

- Line miles in high-fire risk areas (HFA categories of “High” and “Very High”).
- Number of poles categorized as “High-Risk” (See Section 2.4).
- Line miles of small copper conductor in HFA categories of “High” and “Very High”.
- Number of expulsion fuses per line mile in HFA categories of “High” and “Very High”.
- Number of outages (historical) per line mile.

The circuit level risk assessments are a primary consideration for:

- Identification and prioritization of projects.
- Prioritization of facility inspections to enhance wildfire prevention maintenance efforts prior to fire season.
- Determining reclosers to be set to one-shot (non-reclosing) during escalating fire weather conditions.

2.4 Pole level

Per-pole risk assessments represent the most granular view of wildfire risk assessment performed by Black Hills Energy. The assessment focuses on wildlife-caused outages and the potential for an associated ignition. Each wildlife-caused outage is a thermal event and represents a potential ignition source.

Our teams have found this risk assessment to be useful beyond wildlife interaction considerations, further allowing our teams to prioritize distribution integrity projects to most effectively target wildfire risk. Pole configurations that exhibit high wildlife outage risk and are physically located in HFA's categorized as "High" or "Very High" are prioritized for further field investigation and potential retrofitting to reduce overall fire risk.

To determine which pole configurations should be characterized as high wildlife outage risk, Black Hills Energy reviewed historical wildlife-caused outage data. Then, Black Hills Energy partnered with third-party consultants to create a Geographic Information System (GIS) based wildlife electrocution fire risk model.

The goal of the wildlife model is to apply the mathematical risk model published in Dwyer et al. 2013, in which avian electrocution risk for any given pole could be quantified based on the number of jumpers, number of conductors and presence of grounding and presence of good habitat, as shown in the two equations below:

Equation 1: $Y = -0.93167 + (0.09048 \times \text{number of jumpers}) + (0.14506 \times \text{number of primary conductors}) + (0.53203 \times \text{grounding present}) - (0.55151 \times \text{paved area dominant})$

Equation 2: $P = 1/(1 + EXP(-Y))$

Figure 9: Pole risk equation

The final output is a risk index between zero and one, where high values (closer to one) indicate a greater relative risk of avian electrocution than low values (closer to zero).

The model was originally developed to assign relative risk to birds using utility poles. The model predicts that risk increases as poles become more complicated (i.e., greater number of exposed jumpers, increasing number of phases and exposed ground contact points) and when located in favorable habitat.

Because the historical outage data showed many outages were associated with the more-complicated equipment poles, this model is considered suitable representation of ignition risk specific to poles and structures.

Table 9 below summarizes the distribution of poles risk across our HFA classes. This risk assessment allows our teams to target asset replacements, pole retrofits and/or line rebuild projects that most significantly drive down wildfire ignition risks.

Structure risk	Hazardous Fire Area category		
	Zero-moderate	High	Very high
Low risk	65,410	25,456	14,135
High risk	14,404	5,526	3,334

Table 9: Pole risk assessment within HFAs for distribution poles with primary wire attachments (October 2022).

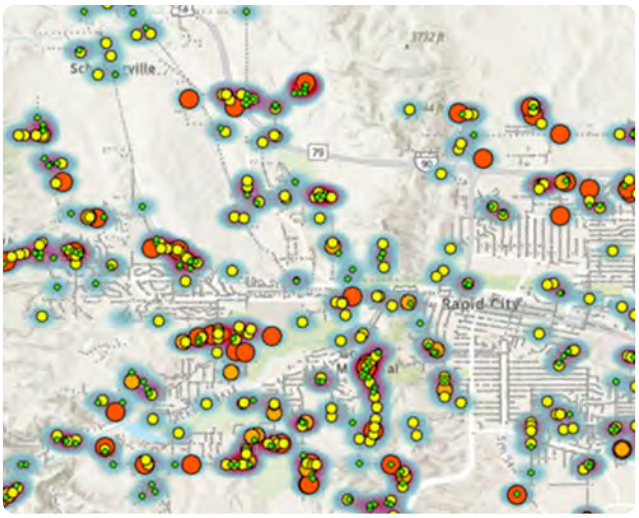


Figure 10: Example GIS map showing Black Hills Energy pole risk assessment results in the vicinity of Rapid City, South Dakota.

3.0

Asset Programs

Asset Programs represent the first layer of our wildfire risk mitigation strategy. Our teams perform and/or oversee a wide variety of inspections and maintenance activities across our electric transmission and distribution system. These activities provide multiple benefits, including mitigating the risk that utility facilities become a source of ignition, electric service reliability and regulatory compliance.

This section focuses on our three primary Asset Programs: Vegetation Management, Line Patrol and Pole Inspections. All three benefit from formalized internal procedures and periodic internal procedure reviews. Lessons learned through work execution are evaluated and leveraged to support continuous program improvement. Technology systems position teams to efficiently and effectively capture asset inspection and maintenance records tied to program execution. Mobile devices, including laptops and iPads, are critical tools based on the need to capture this real-time data while working in the field.

Black Hills Energy maintains access to our power lines through a combination of legal, logistical and technological strategies. We secure rights-of-way (ROW) through easements or agreements with landowners, which allow us to build and maintain infrastructure across both public and private land. To physically reach these lines, especially in remote or rugged areas, we may construct and maintain access roads and trails. Our utility crews rely on specialized vehicles like bucket trucks, ATVs and snowmobiles to navigate different terrains and perform maintenance. Behind the scenes, we use GIS to map infrastructure and plan routes.

3.1 Vegetation Management

Our Integrated Vegetation Management (IVM) program supports our goal to deliver safe and reliable services to our customers while also reducing the risk of wildfire. To protect and enhance system reliability and reduce possible ignitions, we deploy vegetation activities such as tree trimming and removal of hazard trees and unwanted vegetation in areas around electric utility company assets to maintain appropriate power line corridors. We conduct this work in regular cycles across our geographically diverse service territory, based on environmental considerations as well as tree species found within our service territories.

3.1.1 Program overview

Our IVM strategy combines a time- and risk-based approach to work selection, including a focus on compliance, electric service reliability, public safety and wildfire prevention. The choice of control methods is based on considerations such as environmental impact and anticipated effectiveness.

Figure 11: Black Hills Energy IVM process

3.1.2 Applicable standards (industry and regulatory)

Black Hills Energy's vegetation management program processes align with various industry guidelines and regulatory requirements. The American National Standards Institute (ANSI), International Society of Arboriculture (ISA), National Electric Safety Code (NESC) and North American Electric Reliability Corporation (NERC) each direct or influence our program objectives and work execution practices.

ANSI A-300, Part 1 and ISA's Best Management Practices for utility pruning of trees

To the extent possible, Black Hills Energy's vegetation management activities align with guidelines and examples set forth by the ANSI A-300, Part 1, and the ISA Best Management Practices for utility pruning of trees. Both present performance guidelines for the care and maintenance of trees, brush and other woody plants. Internal and contracted teams strive to align work activities with these guidelines; however, field conditions such as land usage and available ROW may limit the extent to which we can apply the guidelines.

NESC

State regulatory entities require electric utilities to maintain their electrical systems in accordance with the NESC. The NESC generally requires the pruning or removal of interfering trees.

The 2023 NESC, Vegetation Management Section 218 states:

A. General

1. Vegetation management should be performed around supply and communication lines as experience has shown to be necessary. Vegetation that may damage ungrounded supply conductors should be pruned or removed.

NOTE 1: Factors to consider in determining the extent of vegetation management required include, but are not limited to: line voltage class, species growth rates and failure characteristics, right-of-way limitations, the vegetation's location in relation to the conductors, the potential combined movement of vegetation and conductors during routine winds and sagging of conductors due to elevated temperatures or icing.

NOTE 2: It is not practical to prevent all tree-conductor contacts on overhead lines.

2. Where pruning or removal is not practical, the conductor should be separated from the tree with suitable materials or devices to avoid conductor damage by abrasion and grounding of the circuit through the tree.

B. At line crossings, railroad crossings and limited-access highway crossings, or navigable waterways requiring crossing permits. The crossing span and the adjoining span on each side of the crossing should be kept free from over-hanging or decayed trees or limbs that otherwise might fall into the line.

NERC standards

Black Hills Energy owns and operates electric facilities that are federally regulated by NERC. This includes reliability standard FAC-003, which establishes requirements specific to vegetation management activities for lines energized at greater than 200,000 volts (other applicability criteria may also apply).

According to NERC, the purpose of the FAC-003 Reliability Standard is to maintain a reliable electric transmission system by using a defensive in-depth strategy to manage vegetation located on transmission ROW and minimize encroachments from vegetation located adjacent to the ROW, thus preventing the risk of vegetation related outages that could lead to cascading outages.

At its highest level, FAC-003 requires applicable electric utilities to maintain Minimum Vegetation Clearance Distances (MVCD), based on those included in Table 10 below. Work practices that support the achievement of the MVCD can be unique to the electric utility and are not specified as part of the standard.

FAC-003 — TABLE 2 — Minimum Vegetation Clearance Distances (MVCD)[17]

For **Alternating Current** Voltages (feet)

(AC) Nominal System Voltage (KV)*	(AC) Maximum System Voltage (kV)[18]	MVCD (feet) Over sea level up to 500 ft	MVCD feet Over 500 ft up to 1000 ft	MVCD feet Over 1000 ft up to 2000 ft	MVCD feet Over 2000 ft up to 3000 ft	MVCD feet Over 3000 ft up to 4000 ft	MVCD feet Over 4000 ft up to 5000 ft	MVCD feet Over 5000 ft up to 6000 ft	MVCD feet Over 6000 ft up to 7000 ft	MVCD feet Over 7000 ft up to 8000 ft	MVCD feet Over 8000 ft up to 9000 ft	MVCD feet Over 9000 ft up to 10000 ft	MVCD feet Over 10000 ft up to 11000 ft	MVCD feet Over 11000 ft up to 12000 ft	MVCD feet Over 12000 ft up to 13000 ft	MVCD feet Over 13000 ft up to 14000 ft	MVCD feet Over 14000 ft up to 15000 ft
765	800	11.6ft	11.7ft	11.9ft	12.1ft	12.2ft	12.4ft	12.6ft	12.8ft	13.0ft	13.1ft	13.3ft	13.5ft	13.7ft	13.9ft	14.1ft	14.3ft
500	550	7.0ft	7.1ft	7.2ft	7.4ft	7.5ft	7.6ft	7.8ft	7.9ft	8.1ft	8.2ft	8.3ft	8.5ft	8.6ft	8.8ft	8.9ft	9.1ft
345	362[19]	4.3ft	4.3ft	4.4ft	4.5ft	4.6ft	4.7ft	4.8ft	4.9ft	5.0ft	5.1ft	5.2ft	5.3ft	5.4ft	5.5ft	5.6ft	5.7ft
287	302	5.2ft	5.3ft	5.4ft	5.5ft	5.6ft	5.7ft	5.8ft	5.9ft	6.1ft	6.2ft	6.3ft	6.4ft	6.5ft	6.6ft	6.8ft	6.9ft
230	242	4.0ft	4.1ft	4.2ft	4.3ft	4.3ft	4.4ft	4.5ft	4.6ft	4.7ft	4.8ft	4.9ft	5.0ft	5.1ft	5.2ft	5.3ft	5.4ft
161*	169	2.7ft	2.7ft	2.8ft	2.9ft	2.9ft	3.0ft	3.0ft	3.1ft	3.2ft	3.3ft	3.3ft	3.4ft	3.5ft	3.6ft	3.7ft	3.8ft
138*	145	2.3ft	2.3ft	2.4ft	2.4ft	2.5ft	2.5ft	2.6ft	2.7ft	2.7ft	2.8ft	2.8ft	2.9ft	3.0ft	3.0ft	3.1ft	3.2ft
115*	121	1.9ft	1.9ft	1.9ft	2.0ft	2.0ft	2.1ft	2.1ft	2.2ft	2.2ft	2.3ft	2.3ft	2.4ft	2.5ft	2.5ft	2.6ft	2.7ft
88*	100	1.5ft	1.5ft	1.6ft	1.6ft	1.7ft	1.7ft	1.8ft	1.8ft	1.8ft	1.9ft	1.9ft	2.0ft	2.0ft	2.1ft	2.2ft	2.2ft
69*	72	1.1ft	1.1ft	1.1ft	1.2ft	1.2ft	1.2ft	1.2ft	1.3ft	1.3ft	1.3ft	1.4ft	1.4ft	1.4ft	1.5ft	1.6ft	1.6ft

* Such lines are applicable to this standard only if PC has determined such per FAC-014 (refer to the Applicability Section above)

* *Table 2 – Table of MVCD values at a 1.0 gap factor (in U.S. customary units), which is located in the EPRI report filed with FERC on August 12, 2015. (The 14000-15000 foot values were subsequently provided by EPRI in an updated Table 2 on December 1, 2015, filed with the FAC-003-4 Petition at FERC)*

Table 10: NERC FAC-003 MVCD

3.1.3 Time-based cycle selection

Cycle duration has been selected based on the unique vegetation characteristics within our service territories. There are two primary drivers that are considered when selecting the appropriate cycle durations:

1. ROW Width: Black Hills Energy has the right to perform maintenance activities on electric facilities within its ROW; this includes vegetation management. ROW widths may vary based on agreements with landowners but are generally consistent based on the energized voltage of the line. ROW widths and a utility's right to maintain facilities are limiting factors when considering cycle durations.

2. Anticipated Vegetation Growth Rates: Growth rates vary based on the species and location of the vegetation. This data is used, specific to service territory location, to determine the necessary clearance required at the time of the trimming activities.

These two datasets are used to determine the clearance needed to avoid unintended contact between vegetation and energized electric facilities. As a result of this analysis, we target the following time-based cycles:

- Distribution facilities: 4-year not to exceed 5-year cycle
- Transmission facilities: 5-year cycle

While Black Hills Energy endeavors to maintain these cycles, they are targets and not firm standards as many variables can influence our ability to perform work within a given timeframe. For example, weather patterns, including storms and snowmelt cycles, access and landowner engagement, contractor staffing levels and crew attrition, vegetation growth rates and the persistence of wildfire events locally, regionally and nationally can all impact the timing of vegetation management activities.

In completing vegetation management work, our teams will focus their efforts and any contractor efforts on circuits that most significantly reduce risk, and we evaluate opportunities to reestablish target cycle lengths.

Figure 12: Example powerline ROW

3.2 Line patrol

Black Hills Energy teams perform visual inspections of our electric facilities as part of our reliability and risk reduction strategies. Teams inspect equipment for hazards that may result in an outage or ignition and remediate those hazards consistent with Black Hills Energy practices. Separate from formal inspection activity, employees engaging in construction and maintenance activities are instructed to proactively identify electric facility conditions that could lead to an outage or an ignition.

3.2.1 Ground line patrol

Black Hills Energy's electric operations teams target a ground level inspection for every line mile on our system (transmission, sub-transmission and distribution) every five years.

Our teams are experienced in hazard identification and reporting requirements. This "boots on the ground" approach provides an opportunity for proactive mitigation of existing and potential hazards.

Figure 13: Example powerline inspectors

3.2.2 Aerial patrols

Sub-transmission and transmission lines (69kV and higher) within our electric service territories are patrolled via helicopter, unless readily accessible by road, providing a distinct perspective in support of hazard identification. These inspections are typically performed annually in the spring, allowing for hazard identification prior to traditional fire seasons and peak outage months. A combination of engineering, electric operations and vegetation management resources support the aerial patrol activities, providing a comprehensive perspective during aerial patrol activities.

Figure 14: Example aerial patrol

3.3 Pole inspections

Our pole inspection program is supported by third-party contractors trained in structural defect identification associated with utility poles. To the extent possible, we leverage a comprehensive inspection that includes sound and bore, full ground line excavation and pole treatment. This approach is widely recognized by the industry as a very accurate wood pole inspection and estimated to effectively identify 98% of rejected poles. In addition to reducing risk associated with pole failures, the process of pole treatment also extends the life of the asset.

Figure 15: Example pole inspection

Visual inspection: A visual inspection is the most basic of all inspection types and is used to assess the condition of the pole above ground, crossarms and hardware.

Sound and bore: This inspection type involves striking the pole with a hammer from the groundline to detect voids. Inspectors are trained to assess potential decay by listening to the sounds and noticing the feel of the hammer. Poles with decay will result in a dull sound and less rebound experienced through the hammer strike. Boring involves drilling into a pole with a 3/8" bit. Trained inspectors will notice a change in the resistance against the drill if it contacts decayed wood. The pole shavings can also be examined to determine the condition of the wood.

Excavation: The accuracy and effectiveness of the inspection is improved when an excavation is added to the process. The soil excavation exposes sections of the pole that are most susceptible to decay. External decay pockets are removed with a specialized chipping tool and a pole circumference measurement is taken. The remaining circumference, or effective circumference, is compared to a standard pole of the same size and class to determine if the remaining pole strength is sufficient for its use.

Treatment: Treatments include chemicals applied to, or injected into, a wood pole with the objective of prolonging usability of the pole by preventing decay or resisting insects.

3.3.1 Time-based cycle selection for pole inspections

Black Hills Energy referred to Rural Utility Service (RUS) Bulletin 1730B-121: Wood Pole Inspection and Maintenance, when we established our time-based cycle duration for pole inspections. The document was developed by the U.S. Department of Agriculture to furnish information and guidance for work practices associated with electric pole maintenance.

The bulletin establishes decay zones across the continental U.S. based on summer humidity, temperature information and a pole performance study performed by RUS. Our service territories are located within Decay Zone 1 as illustrated in Figure 16.

Figure 16: Decay severity zones for wood utility poles (RUS Bulletin 1730B-121)

Based on our service territories and the Decay Zone 1 categorization, we should perform an inspection every 12-15 years as referenced in Table 11.

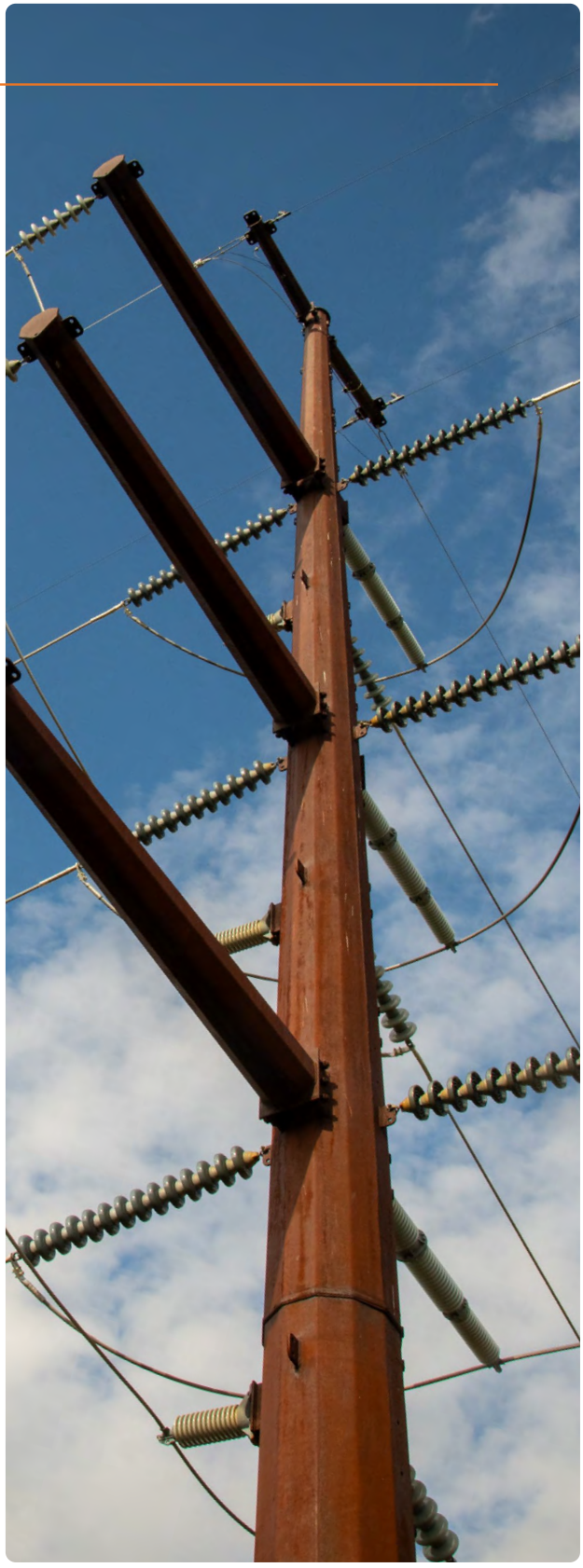
Decay zone	Initial inspection	Subsequent re-inspection
1	12-15 years	12 years
2 and 3	10-12 years	10 years
4 and 5	8-10 years	8 years

Table 11: RUS Inspection Cycles based on Decay Zones (RUS Bulletin 1730B-121)

Based on this analysis, we perform an inspection every 10 years, not to exceed 12 years on all wood poles supporting distribution, sub-transmission and transmission facilities. Poles that do not pass inspection are remediated on a timeline identified in internal policy.

4.0

Integrity Programs



We have established Integrity Programs focused on improving reliability and reducing risk through investment strategies and asset improvements. Our teams use the risk assessments referenced within this WMP to identify and prioritize integrity projects that most significantly drive down risk. This section describes our Integrity Programs in greater detail including our Distribution System Integrity Program (DSIP), Wildlife Retrofits, and Undergrounding Projects.

4.1 DSIP

Our Distribution System Integrity Program is a proactive approach to distribution improvements and modernization through capital investments. It provides a programmatic approach that supports project identification and prioritization activities. Key program objectives include reducing wildfire risk and improving the safety and reliability of the electric system.

Primary drivers of DSIP projects:

- Wildfire risk.
- Age of assets and expected useful life.
- Reliability metrics.
- Number of customers served.
- Lines utilizing small copper conductor.

The team assesses each of these drivers and applies a weighted criteria approach that results in a prioritization ranking. The heaviest weighted factor is wildfire risk. Projects typically resulting from the DSIP program include line rebuilds in high-fire risk areas. In some cases, these projects involve rerouting facilities to reduce the risk of wildfire or undergrounding facilities, where feasible.

4.2 Wildlife retrofits

Wildlife interactions and the potential for wildlife caused ignitions represent a challenge for electric utilities from both a reliability and wildfire risk perspective. Black Hills Energy has completed asset-based risk assessments (Section 2.4) to further our understanding of the specific risks our electric facilities face with wildlife. The additional insight produced through those assessments enables our teams to most effectively target mitigation options that drive down risk.

Based on our wildlife risk assessments, European starlings and squirrels are the most common wildlife interaction we experience with respect to our electric facilities.

Wildlife interactions with overhead electric distribution equipment are sometimes unavoidable and inherent to operating an electric utility. We have found there is a strong case for proactively making appropriate infrastructure investments, especially when those investments can demonstrate risk reduction.

Black Hills Energy has construction standards that are engineered to reduce the likelihood of wildlife interactions with our facilities. Examples include using wildlife guards on overhead equipment as shown in Figure 20, design overhead facilities with increased spacing between energized components and the utilization of covered jumpers for complex structure construction. New electric facilities are built to these standards and pole retrofit projects are targeted based on the risk assessments described within this WMP.

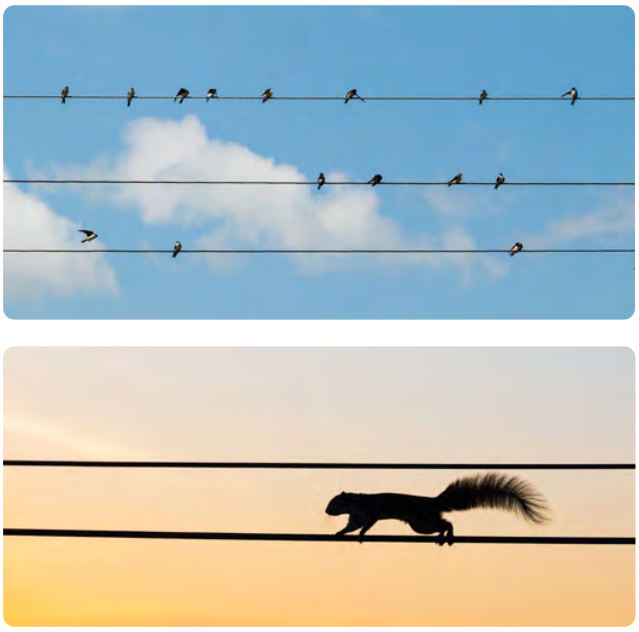


Figure 17: Examples of common wildlife interactions on Black Hills Energy facilities

Figure 18: Example of wildlife guards on overhead equipment

4.2.1 Avian Power Line Interaction Committee

Black Hills Energy is a member of the Avian Power Line Interaction Committee (APLIC). In 2011, we adopted an Avian Protection Plan (APP) which provides structure and procedures to facilitate compliance with applicable avian and wildlife laws, regulations and permits. The APP is aligned with industry best management practices including APLIC and United States Fish and Wildlife Service (USFWS) recommendations (APLIC and USFWS 2005). The plan states that we will document bird mortalities and injuries, poles and lines with elevated risk of wildlife interaction and high-risk nests. It also states that we will provide information, resources and training to improve employees' knowledge and awareness of APP requirements. We have also certified that all new facilities will provide avian-friendly clearances and that Black Hills Energy electric utility operating companies will retrofit or modify infrastructure where a protected bird has died or been injured to prevent future incidents.

4.3 Underground projects

Black Hills Energy recognizes that underground facilities have a reduced wildfire risk profile as compared to overhead facilities. We also recognize that undergrounding is not always feasible or cost effective. As such, our teams evaluate opportunities to construct new facilities underground or to replace existing overhead facilities with underground cable.

Of our 9,197 total line miles within the Black Hills Energy footprint, 2,289 (approximately 25%) are underground. That number will continue to grow as undergrounding is a primary consideration for growth and integrity projects. Furthermore, 37% of our distribution miles in high-fire risk areas across the Black Hills Energy footprint are underground.

5.0

Operational Response

Black Hills Energy rounds off its three-layered approach with Operational Response. Our understanding of wildfire risk across our service territories enables our teams to adjust various operating practices and work activities to mitigate potential wildfire ignitions.

5.1 Situational awareness

Environmental conditions can rapidly evolve. To understand developing environmental conditions, Black Hills Energy utilizes a third-party meteorological service to obtain weather forecast data that is used to obtain situational awareness (SA). The third-party service runs and maintains a proprietary forecast system that integrates numerous leading global and regional forecast models in compiling its weather forecast. Use of a third-party service provides Black Hills Energy with access to weather forecasts generated by tools currently unavailable within the company. The third-party service couples technology-based forecasting tools with trained meteorologists who provide comprehensive weather forecasts that include timing, duration and intensity of weather systems. Monitoring real-time weather conditions is essential in assessing appropriate operational responses including whether environmental conditions warrant initiating an Emergency PSPS.

Black Hills Energy also uses a variety of additional resources to observe current weather conditions, including direct data from its own network of weather stations, Remote Automatic Weather Stations (RAWS) and the National Weather Service (NWS) through the National Oceanic and Atmospheric Administration's (NOAA) Weather and Hazards Viewer.

Parameter	Region	Oct 7	Oct 8	Oct 9	Oct 10	Oct 11
Wind Speed	Co Mtn	1	1	1	1	1
	Pueblo	1	1	1	1	1
	Black Hills	1	1	1	1	1
	SD Grasslands North	1	1	1	1	1
	SD Grasslands South	1	1	1	1	1
	Wyoming	1	1	1	1	1
Wind/Gust	Co Mtn	1	1	1	1	1
	Pueblo	1	1	1	1	1
	Black Hills	1	1	1	1	1
	SD Grasslands North	1	1	1	1	1
	SD Grasslands South	1	1	1	1	1
	Wyoming	1	1	1	1	1
Wildfire	Co Mtn	1	1	1	1	2
	Pueblo	3	3	3	3	3
	Black Hills	1	1	1	1	1
	SD Grasslands North	1	2	1	3	3
	SD Grasslands South	1	3	1	3	3
	Wyoming	2	3	2	2	3
Snow	Co Mtn	1	1	1	1	1
	Pueblo	1	1	1	1	1
	Black Hills	1	1	1	1	1
	SD Grasslands North	1	1	1	1	1
	SD Grasslands South	1	1	1	1	1
	Wyoming	1	1	1	1	1
Ice	Co Mtn	1	1	1	1	1
	Pueblo	1	1	1	1	1
	Black Hills	1	1	1	1	1
	SD Grasslands North	1	1	1	1	1
	SD Grasslands South	1	1	1	1	1
	Wyoming	1	1	1	1	1
Confidence Level	Co Mtn	High	High	High	Medium	Medium
	Pueblo	High	High	High	Medium	Medium
	Black Hills	High	High	High	Medium	Medium
	SD Grasslands North	High	High	High	Medium	Medium
	SD Grasslands South	High	High	High	Medium	Medium
	Wyoming	High	High	High	Medium	Medium

Table 12: Example five-day weather forecast

Our field operation teams review a five-day fire-weather forecast allowing for improved insights related to environmental factors that drive wildfire risk across our service territories. The third-party weather forecasting service produces an Energy Event Index (EEI) risk ranking (Section 5.2) based on localized weather conditions across our service territories. This SA positions our teams to make informed, data-driven decisions, including disabling automatic reclosing of devices (Section 5.3.1), adjusting work activities for the day (Section 5.5) and evaluating the need to potentially implement a PSPS as a last resort safety measure (Section 5.6).

5.2 EEI

The EEI is a risk ranking, on a 1-5 scale, that is produced by our retained third-party vendor and is primarily influenced by localized relative humidity and wind conditions experienced within our service territories. Other key drivers include Fire Weather Watches and Red Flag Days issued by the National Weather Service.

The EEI risk ranking is described below:

- **Level 1** – Low: All factors, especially burn index are low compared to the risk of wildfire.
- **Level 2** – Moderate: Moderate winds are present and relative humidity is lower, stay aware.
- **Level 3** – High: Higher winds are present and relative humidity is lower; monitor closely.
- **Level 4** – Severe: Severe winds and low humidity are expected.
- **Level 5** – Extreme: All factors indicate extreme wildfire risk.

The EEI risk ranking drives operational decisions, as described in subsequent sections.

5.3 Equipment operations, outage response and operating procedures

We leverage wildfire risk SA to drive decisions relating to system configuration and equipment operations. This section covers these considerations based on EEI risk rankings under otherwise normal operating conditions. Operational decisions during active fires or other emergency conditions are covered in Section 5.7.

5.3.1 Equipment operations

Isolation devices (e.g. fuses, breakers, reclosers) are used throughout our electric system. They are designed to identify system abnormalities and to isolate (de-energize) problem areas while reducing the overall impact to customers. Some isolation devices have reclosing capabilities. These devices are used to re-energize electric facilities after a predetermined amount of time to prevent longer duration outages that result from a temporary system abnormality. Under normal conditions, these devices provide significant value to electric service reliability and can avoid field crew truck rolls.

This automatic reclosing functionality can, however, increase wildfire risk by automatically re-energizing facilities when a problem — or electric fault — persists, potentially causing an ignition. The potential for an ignition increases during high-fire risk days. Black Hills Energy has formalized processes that disable automatic reclosing on a subset of these field devices that feed high-fire risk areas while under EEI Level 4 and Level 5 conditions.

Figure 19: Example of distribution line recloser

5.4 Outage response

Outages that occur during times of high-fire risk require careful consideration and assessment prior to re-energization of facilities. While under EEI Level 4 and Level 5 conditions, Black Hills Energy field crews perform a patrol of impacted electric facilities prior to re-energization. Localized weather conditions are considered (i.e., recent moisture) and may influence the need or the extent of the patrols. This cautionary measure reduces the likelihood of an ignition occurring during electric service restoration efforts. This generally results in needing additional time to restore electric service to customers, but is an example of balancing restoration time, safety, reliability and mitigation of risk.

5.5 Fire weather operating procedures

We have formalized a Work Mitigations and Restrictions for Escalating Fire Weather procedure that guides field and seasonal operations during escalating fire weather conditions. This operational procedure is applied across all our electric service territories.

5.5.1 Work considerations in escalating fire weather

Certain field work activities have the potential to cause wildfire ignitions if not managed appropriately. Our procedure assigns mitigation measures to common field tasks and associates them with operating conditions. This may include postponing or delaying the work until wildfire risk conditions improve. Table 13 groups potential mitigation activities and categorizes them as A, B, C, SC or R. Pre-job briefings (tailboards) and having fire tools available at the jobsite are always required.

Table 13 organizes specific work mitigation measures into defined categories. Table 14 links various work activities with EEI levels to indicate which mitigation category should be applied. These conditions, along with the selected mitigation measures, are captured as part of our pre-job safety briefings that occur prior to the start of work activities.

Most field work activities can be performed safely when wildfire ignition risk is appropriately mitigated. Work activities and EEI risk ranking combinations that result in "SC" and "R" mitigation groups are considered the exception. Combinations resulting in a "SC" or "R" mitigation group require review and approval from management (typically electric operations managers and general managers). This optionality is necessary as there may be occasions when essential work (work that is deemed necessary based on public and/or employee safety) needs to be completed under adverse wildfire conditions (EEI Level 4 or Level 5) to preserve public health.

Mandatory	Mitigation Options Group A	Mitigation Options Group B	Mitigation Options Group C	Special Circumstances (SC)	Restricted Work (R)
• Tailboard • Fire tools on truck • Fire tools at job site (within 50')	• Designated fire sweep	• Fresh tailboard • Welding blanket(s) • Fire retardant • Dedicated fire sweep	• Fire retardant • Special mitigation / equipment	• Essential work that is done only with management approval and mitigation determination by management	• Work may not be done during these conditions

Table 13: Work mitigations and restrictions for escalating fire weather

		Level 1 - Low	Level 2 - Moderate	Level 3 - High	Level 4 and 5 - Severe
Work activity		**EEI 1**	**EEI 2**	**EEI 3**	**EEI 4**
Vehicle sse with potential vegetation contact		A	A	B	SC
Access road maintenance		A	B	B	SC
Cutting, grinding, welding	**Substation**	A	A	B	SC
	ROW	A	SC	SC	R
Vegetation management work		A	B	B	SC
Other at-risk maintenance or construction activities		A	B	C	SC

Table 14: Work mitigation groups based on work activity & EEI risk ranking

5.6 Emergency Public Safety Power Shutoff

As part of our wildfire risk mitigation strategy, Black Hills Energy has developed an Emergency Public Safety Power Shutoff (PSPS). An Emergency PSPS involves proactively de-energizing electric distribution facilities in areas of high-wildfire risk to mitigate the potential for electric equipment becoming a source of wildfire ignition when environmental conditions warrant. Black Hills Energy's Emergency PSPS is a last resort safety measure to help keep our communities safe and mitigate the risk wildfire poses to our communities.

Black Hills Energy understands that shutting off the power on its distribution system, even to reduce wildfire risk, is disruptive. Consequently, Black Hills Energy has developed its Emergency PSPS with the goal of balancing the need to mitigate wildfire risk with the potential impact that power shut offs have on Black Hills Energy customers and communities. To accomplish that balance, the key principles that drive our Emergency PSPS program include:

- Prioritizing community and employee safety from the threat of a catastrophic, utility equipment-caused wildfire;
- Minimizing disruptions from power outages as much as possible while still reducing the risk of utility equipment-caused wildfires;
- Providing clear, timely and accessible notifications to key stakeholders before, during and after an Emergency PSPS event;
- Maintaining and improving Black Hills Energy's SA and ability to monitor environmental conditions.

As part of Emergency PSPS planning and operational decision-making, Black Hills Energy considers potential impacts to public safety. These considerations may include factors such as the presence of facilities that support emergency response, water supply systems or other functions, which could impact public safety if interrupted.

To the extent possible, this information will be considered when making decisions regarding the timing, scope or sequencing of PSPS actions, and specifically with regard to the sequencing of restoration. Where applicable, Black Hills Energy will coordinate with emergency response agencies to identify potential safety concerns in affected areas.

As further described in Section 5.6.4 (PSPS affected area maps), Black Hills Energy has undertaken substantial work to identify the areas within its service territory which could be impacted by a PSPS. Exemplar maps depicting PSPS impacted areas, as currently identified for each service territory, are included in Appendix A of this WMP. The PSPS affected area maps included with this WMP are illustrative in nature as Black Hills Energy plans to update them on an ongoing basis, or as the PSPS impacted areas change. If updates are required, they will be posted on the Black Hills Energy website.

5.6.1 PSPS situational awareness

One of the foundational components of Black Hills Energy's Emergency PSPS is SA. For purposes of Black Hills Energy's Emergency PSPS program, SA includes understanding the operational and environmental conditions and being prepared to leverage that information in operational decision-making.

SA is critical to implementing the Emergency PSPS as environmental conditions drive the determination as to whether a PSPS will be activated. Specifically, there are two environmental conditions which Black Hills Energy considers in evaluating whether to activate a PSPS: wind gust speed and low relative humidity. Black Hills Energy does not intend to trigger a PSPS based only on the existence of issuance of a Red Flag Warning (RFW) by the NWS; however, a RFW will trigger other operational responses as discussed in Section 5.3.

When forecasted environmental conditions indicate an elevated risk of wildfire (EEI Level 5), the initial monitoring stage of Black Hills Energy's Emergency PSPS is initiated.

Figure 20: Black Hills Energy crew installs a weather station

5.6.2 Stages of an Emergency Public Safety Power Shutoff

A well-defined, phased approach is a critical component of an Emergency PSPS strategy. Figure 21 below outlines the sequencing of how a PSPS event may be declared, escalated, de-escalated and concluded.

This structure supports clear communication among internal and external stakeholders and ensures that all strategic components of the Emergency PSPS follow a consistent and coordinated timeline. In the initial development of its Emergency PSPS, Black Hills Energy worked with a consultant that specializes in wildfire mitigation planning to develop its overall strategy. In light of that collaboration, Black Hills Energy's PSPS framework and terminology was developed with the objective that its framework and terminology would be generally consistent with framework and terminology used by other similarly situated utilities in the industry.

It is important to recognize that the phases outlined in Figure 21 may not always occur in sequence. Due to the rapidly changing and unpredictable nature of environmental conditions, timelines may either be accelerated or delayed. For instance, a PSPS event could escalate from "Watch" to "Warning" or "Power Off" more quickly than expected, or it could be downgraded from "Warning" to "Watch" if de-energization is still being considered, but the timing has shifted.

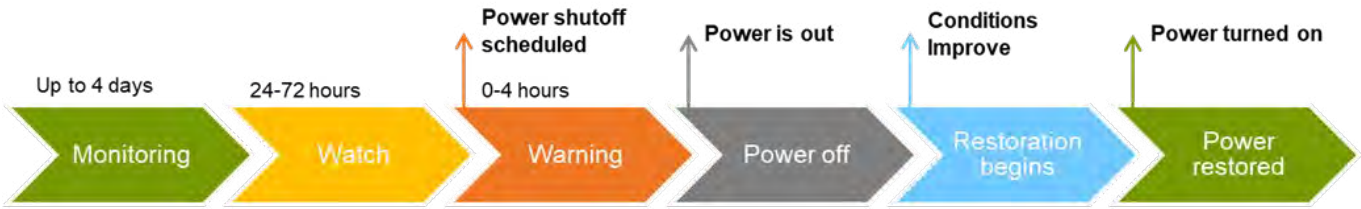


Figure 21: Example PSPS sequence and timeline

Monitoring

In the Monitoring stage, Black Hills Energy personnel continuously assess evolving environmental conditions including wind gust speed and relative humidity and monitor the need for selective de-energization. During this stage, Black Hills Energy will also evaluate and re-evaluate the circuits or areas that could be impacted by a PSPS as the situation changes.

During the Monitoring stage, the potential for an Emergency PSPS is evaluated with the anticipated de-energization (Power Off) event expected to occur more than 72 hours in the future. The Black Hills Energy Incident Command Structure, described in Section 5.6.4 below, is formed at this time to prepare for a potential PSPS event. Public Safety Partners and OEMs are notified and engaged for a coordinated community response. Depending on the scope of the PSPS, Community Resource Groups may also be notified.

Watch

In the Watch stage, communications and operational planning intensify, ensuring readiness as conditions evolve. At this stage, the need for selective de-energization remains under review, with the expected timing of a Power Off within 24 to 72 hours.

Proactive communications begin with customers in potential PSPS impact areas begin. Communication methods will include a variety of channels, including phone calls, emails, text messages, social media, media outlets and the Black Hills Energy website. Communications with OEMs and Public Safety Partners continue throughout the Watch stage. Weather monitoring and evaluation/re-evaluation of potentially impacted circuits and areas continue throughout the Watch phase.

Warning

A PSPS Warning is initiated when Black Hills Energy's Incident Command Team (ICT), as described in Section 5.6.4 below, decides to proceed with selective de-energization. Once the decision is made to de-energize, a PSPS warning is formally declared, customers in impacted areas are notified, and the de-energization is scheduled. Customers will be notified through a variety of channels, including phone calls, emails, text messages, social media, media outlets and the Black Hills Energy website. The Warning declaration serves as a critical trigger point for a range of operational and communication activities, including the mobilization of electrical crews and outreach to OEMs and Public Safety Partners and, if applicable, other impacted utilities. At this stage, the expected timing for Power Off is expected within 0 to 4 hours.

The ICT continues to monitor environmental conditions and continues to evaluate, re-evaluate and define potentially impacted circuits throughout the Warning phase. If environmental conditions in the impacted area worsen or do not materially change, the PSPS will continue to Power Off status. If environmental conditions improve, the ICT can return to Watch status.

Power off

As environmental conditions warrant, and at the scheduled time, Black Hills Energy personnel will de-energize the identified portions of its electrical system. Black Hills Energy personnel will carry out the de-energization of the specified sections of the electrical system. To the extent we have the capability in place, this work may be performed remotely via Supervisory Control and Data Acquisition (SCADA). Where that capability is not available, the work will be performed directly in the field by qualified individuals.

During this time, Black Hills Energy will continue to evaluate environmental factors, develop a re-energization plan and provide ongoing updates to customers, OEMs and Public Safety Partners. Additional engagement with key Community Resource Groups may occur during this phase. The Outage Map described in Section 5.6.3 below and posted on the website below will be maintained and updated during the Power Off stage.

Restoration begins

Restoration begins when conditions improve, and the ICT determines that high-risk fire conditions have diminished. Prior to power being restored, Black Hills Energy personnel will physically inspect the de-energized infrastructure to confirm it is safe for reactivation and perform any necessary repairs. At the outset of the restoration stage, Black Hills Energy will notify OEMs, Public Safety Partners and impacted customers that restoration has started. To the extent possible, estimated restoration times will be provided. Restoration times will, however, vary based on conditions, location and any identified damage. Restoration may be completed in one operation or may be conducted in phases, depending on the size of the outage.

Power restored

A PSPS event ends after the de-energized systems have been re-energized. The key objective of this phase is to confirm that all affected areas have been fully restored. Communication with Public Safety Partners, OEM's, customers and other stakeholders concludes.

A visual summary of the various stages of the PSPS stages is shown in Figure 22 below.

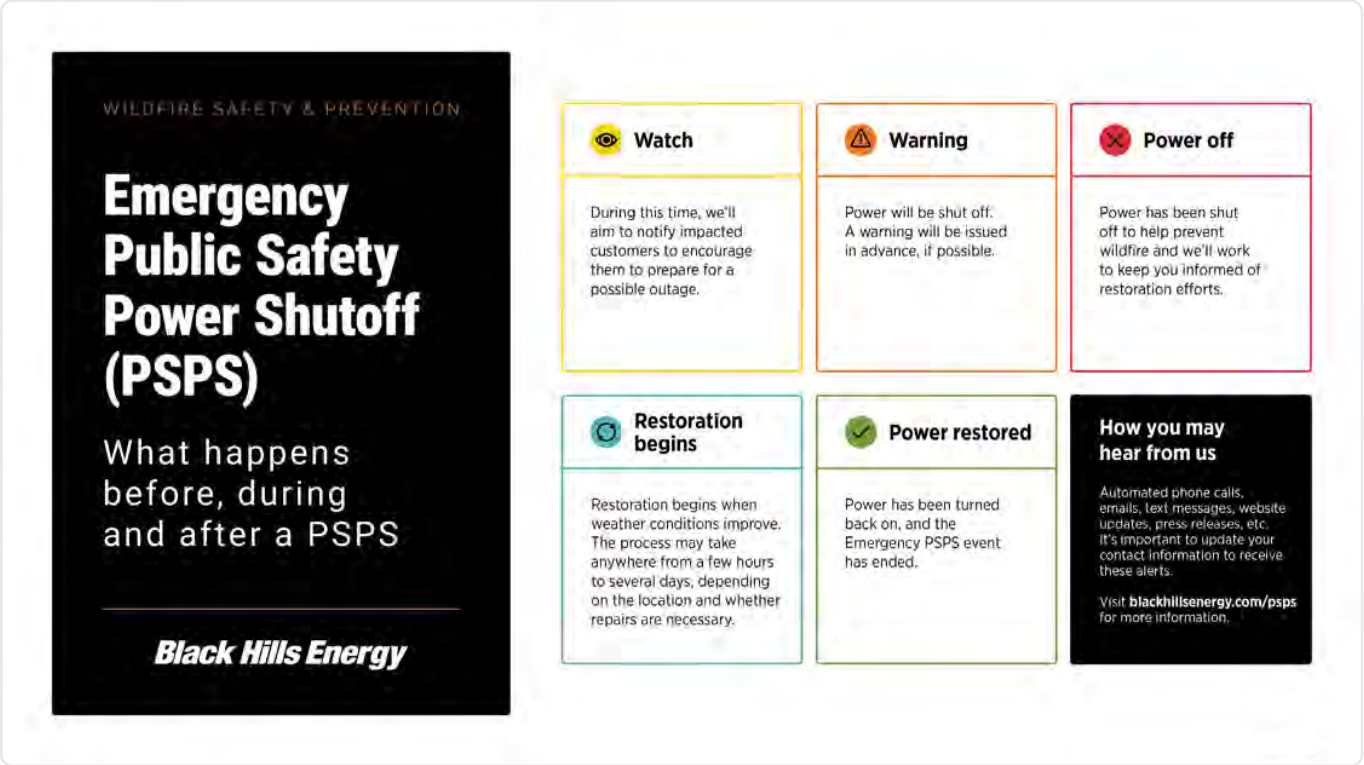


Figure 22: Example PSPS sequence and timeline

5.6.3 Communication and stakeholder engagement

Black Hills Energy is committed to safeguarding the communities we serve through planning, communication and strong partnerships with Public Safety Partners and OEMs. This section outlines our strategies for stakeholder engagement, emergency communications and inter-utility coordination. It details the protocols for notifying potentially impacted customers and describes the tools and resources, such as outage maps and PSPS affected area maps, that support SA.

Coordination with Public Safety Partners and Offices of Emergency Management

Black Hills Energy's goal is to build strong partnerships with OEMs, Public Safety Partners and Community Resource Groups to support coordinated responses to events that impact the communities we serve. In developing this WMP, Black Hills Energy conducted stakeholder educational workshops, had one-on-one meetings with community leaders, and solicited input from OEMs and Public Safety Partners. Before making substantive changes to a filed WMP, Black Hills Energy plans to undertake additional stakeholder engagement.

In the event of an Emergency PSPS, Black Hills Energy will coordinate closely with OEMs, Public Safety Partners and Community Resource Groups. In addition, Black Hills Energy will maintain regular communication with local government leaders. This may occur through voice, text and email notifications, occurring before and during PSPS events. Additionally, a Black Hills Energy representative may be deployed to the affected State or County Emergency Operations Centers to serve as a Liaison Officer, providing a direct and continuous flow of information. When a potential Emergency PSPS is forecasted, Black Hills Energy will aim to inform Public Safety Partners and OEMs days in advance that weather and environmental conditions, such as wind gust speed and low relative humidity are indicative of a potential need for a PSPS.

Emergency PSPS communications with potentially impacted customers and other utilities

When feasible, Black Hills Energy will strive to provide notice to potentially impacted customers and communities between 48 and 72 hours in advance of a PSPS. This notification includes critical customers and medically sensitive customers. Black Hills Energy will use multiple communications channels to contact all customer groups, including automated text messages, phone calls and emails, in addition to social media posts and traditional media releases. Black Hills Energy has also modified its system so that all customers (including critical customers and medically sensitive customers) can identify multiple additional contacts on their account and all identified people will receive account and emergency/weather notifications. If rapidly changing weather conditions or other emerging circumstances prevent early notification, Black Hills Energy will initiate communications as soon as possible.

Additional updates will be provided as conditions evolve as outlined in Section 5.6.2, however, Black Hills Energy reserves the right to tailor frequency and content of notifications to the specific situation. In cases where advance notice is not possible, Black Hills Energy will take reasonable steps to communicate promptly and clearly.

As part of its Emergency PSPS development, Black Hills Energy leveraged multiple communication channels including bill messages, email, social media, its website, the online customer portal and media outlets to encourage customers to update their contact information to ensure that they receive the notifications described in this section. Customers can update their information directly through the Black Hills Energy website through their online account or by calling customer service.

Outage map

Clear and timely communication about the location and status of PSPS events is essential to supporting our customers before and during an event. Black Hills Energy will provide an interactive outage map tool on the Black Hills Energy website that will display PSPS-specific information, including the geographically impacted area of the event.

The map will be updated regularly throughout the duration of the event to keep customers informed about current conditions and estimated restoration times. This tool plays a key role in transparency and accessibility of information for both customers and community partners.

Black Hills Energy's outage map can be found at *blackhillsenergy.com/outages*.

PSPS affected area maps

The PSPS affected area maps were developed to support proactive Emergency PSPS planning by identifying locations where the combined influence of fuels, weather conditions and system characteristics create elevated wildfire hazard. These maps are available to OEMs, customers, Public Safety Partners and other interested stakeholders through Black Hills Energy's website. They identify the areas within Black Hills Energy's service territories or facilities that might, under specific environmental conditions, be subject to an Emergency PSPS. Exemplar maps are shown in Appendix A.

Black Hills Energy's mapping approach combines wildfire simulation modeling with structured field analysis. Wildfire simulation modeling enables a scalable, data-driven assessment of fire hazard across complex landscapes, applying a uniform methodology throughout the service territory. Models, however, cannot fully capture all real-world conditions such as ingress and egress challenges, infrastructure conditions, suppression access or community-specific vulnerabilities. To address this, modeled results were reviewed and refined through field analysis with utility personnel and wildfire risk mitigation experts. The result is an iterative process where modeling and field input work in tandem to produce fire hazard classifications that are data driven and operationally grounded.

Other electric utilities

Black Hills Energy will actively coordinate with neighboring electric utilities when shared infrastructure may be affected by a PSPS event. This includes communicating in advance of any planned de-energization that could impact another utility's operations. This also includes sharing information necessary to support system reliability and SA. Coordination will occur though established operational and emergency communication channels and will be initiated as part of the ICT structure when a PSPS event is being evaluated or implemented.

5.6.4 Operational capabilities and response

Black Hills Energy's operational readiness is a cornerstone of its Emergency PSPS, ensuring that decisions are informed and responsive to rapidly changing weather conditions. This section outlines the protocols and organizational structures that support SA, decision-making and coordinated response efforts. Black Hills Energy leverages a range of capabilities to manage PSPS events. These operational strategies are designed to minimize customer impact while prioritizing public safety.

De-energization protocol

The unpredictable behavior of wildfires, environmental conditions and weather patterns makes it difficult to forecast when a PSPS will be necessary. As a result, real-time assessments and agile decision-making are critical. Black Hills Energy will use the tools identified in this section to monitor changing conditions. Depending on evolving environmental conditions, Black Hills Energy may terminate the progression of a PSPS event at any time during the process or revise its assessment of potentially impacted circuits or areas.

Incident Command Team

Black Hills Energy's ICT is a well-established organizational structure that the company has relied on for many years to manage a wide range of emergency situations and maintain business continuity utilizing the Incident Command System ("ICS"). An ICT will be mobilized during the Monitoring stage of an anticipated Emergency PSPS. The ICT will be responsible for communicating updates as environmental conditions evolve, making operational decisions, coordinating response efforts and allocating resources to ensure an effective and organized approach through each stage of the Emergency PSPS process.

While the ICS was developed to be flexible and scale to meet the needs of specific incidents, certain roles in an ICT Black Hills Energy are frequently utilized. An example of a common ICT structure is shown in Figure 23.

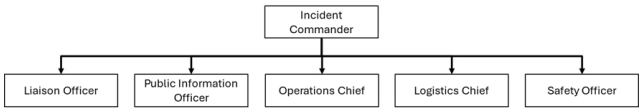


Figure 23: Example Black Hills Energy ICT structure

The Incident Commander serves as the head of the ICT and has responsibility for the management of a PSPS. The Incident Commander has the direct responsibility for making PSPS Power Off and restoration decisions.

The Liaison Officer is responsible for serving as the point of contact with external agencies during a PSPS event. The Liaison Officer will ensure that agency representation is properly integrated into the PSPS response and may join an external agency's command center.

The Public Information Officer manages communications between the ICT and the public, media, customers and other stakeholders.

The Operations Chief is responsible for managing the tactical operations of the teams that will execute the specific action plan for an Emergency PSPS event. The Operations Chief will also ensure that adequate staff are available to support an Emergency PSPS.

The Logistics Chief is responsible for ensuring that all resources and services needed to support incident operations are provided efficiently and effectively.

The Safety Officer is responsible for planning safety communications, coordinating safety activities and developing and implementing a safety plan for employees, customers and the public.

Power system analysis

Black Hills Energy continuously monitors the status and performance of the transmission and distribution systems it owns and operates. Black Hills Energy system operators and engineers review the status and reliability on a periodic and real-time basis to ensure these systems remain stable under normal operating conditions as well as during contingencies.

Distribution feeders on Black Hills Energy's system are typically isolated from one another, meaning an outage on a single feeder does not affect the stability of other feeders. This design helps localize disruptions and simplifies the outage management and restoration process.

Sectionalizing equipment

Sectionalizing is the process of dividing a power system into smaller sections using switchable devices. This allows utilities to isolate faults, reroute power and minimize the scope and scale of outages. Black Hills Energy uses switchable devices to sectionalize the electric system to improve reliability, safety and operational flexibility. These devices may be controlled remotely by Black Hills Energy or may require manual intervention to operate. Black Hills Energy will use existing and additional sectionalizing devices to de-energize the impacted portions of the power system during a PSPS event while minimizing customer impact as much as possible. The existence of sectionalizing equipment allows for a more targeted approach. Specifically, specific circuits, areas or feeders can be de-energized rather than a broad geographic area.

Continuous improvement

In today's day and age, an Emergency PSPS plan is a critical tool to mitigate the risk of electric facilities becoming a source of ignition in areas with elevated wildfire risk. At the same time, power outages also present challenges and disruptions to customers that must be balanced against the risk of a utility equipment-caused wildfire. To balance the key considerations of public safety while minimizing power disruptions, Black Hills Energy will continue to refine its Emergency PSPS plan using data and analysis to better balance wildfire prevention with power reliability.

5.7 Active fire response and emergency preparedness

Strong partnerships with OEMs and Public Safety Partners are essential during "active fires." The overall goal, for all parties involved, is to provide firefighter safety, public safety and to minimize impacts on company assets, customers and electric service reliability. Formalized processes and periodic tabletop exercises are used to prepare our teams for these events.

5.7.1 Emergency preparedness

Black Hills Energy is committed to strengthening relationships with our OEMs and Public Safety Partners given the criticality of collaboration in wildfire emergency response. Our team provides electrical safety training to first responders using a high voltage trailer training prop and routinely responds to residential and commercial fires. Interactions like these provide opportunities for both parties to educate each other on key considerations that pertain to their operational and emergency response practices.

We have also adopted use of the ICS. This level of formalization is critical during low frequency, high impact events to ensure key contributors are efficient and effective. An established Major Event Playbook (MEP) enables Black Hills Energy to pull together the appropriate resources quickly, communicate event details to key stakeholders and company representatives and coordinate work activities. Tabletop drills are used to simulate potential events and strengthen ICS skills. During complex wildland fires, a company Liaison Officer serves as the single point of contact with the Incident Management team.

To enhance emergency communications, we provide phone numbers and "whom to call" information to Public Safety Partners in our service areas. For emergency/critical communications, a single, rolling phone number per functional area is used.

5.8 Customer, public and agency communications

Black Hills Energy recognizes the importance of having a public awareness campaign related to wildfire risks, preparedness, and mitigation planning. The campaign leverages relationships with key stakeholders such as OEMs, Public Safety Partners and local organizations to activate a comprehensive community outreach strategy. Critical messaging is disseminated across multiple channels including traditional media relations efforts, social media, community meetings, website content and direct customer communications. These communications channels are leveraged to support public awareness campaigns and communicate outage and restoration information. Additionally, we participate in regular meetings with OEMs and Public Safety Partners to collaborate on emergency response and provide a single point of contact to represent Black Hills Energy.

5.9 Recovery, restoration and remediation of service

Our post-fire recovery efforts begin as soon as the scene is safe, and the controlling fire agency agrees to allow utility access. A restoration plan including timeline, inspection activities and a prioritized list of desired work areas is communicated to the OEM's ICS as soon as practical.

Communication is key to expeditious restoration. The Black Hills Energy company representative on scene is responsible for laying the groundwork for each of these activities as soon as possible. Coordination with key fire personnel such as air operations is to occur before any restoration activities begin.

Our approach includes a mechanism for personnel accountability so that all personnel assigned to work in the fire area can be accounted for. The safety of electric crews, firefighters and the public is of the highest importance. All overhead facilities within a fire perimeter are to be patrolled and repairs (temporary or permanent) made prior to re-energization. Along with line construction personnel, vegetation management crews may be engaged to patrol and inspect certain areas and fuel types if there are concerns related to vegetation.

We collect tools, supplies, equipment, contractors and internal personnel in anticipation of a fire area being declared safe for utility company restoration operations. If the magnitude of wildfire damage is considered significant, mutual assistance will be considered.

6.0

Conclusion

Black Hills Energy has developed a WMP as part of its commitment to deliver safe, reliable and cost-effective electric services to our customers. The WMP demonstrates our continued focus on taking proactive measures to reduce the risk of our equipment causing ignitions and minimizing the potential impact for wildfires in our service territories.

Our organization is actively involved in industry conversations relating to wildfire and takes steps to reinforce a fire safe culture. Our team's awareness of key drivers associated with wildfire risk and opportunities to mitigate risk continues to grow. We are committed to continuous learning and improving our approach to reduce the overall risk of wildfires to our coworkers, customers, communities and the environment.

The three-layered approach referenced throughout this document sets the foundation for our wildfire risk mitigation strategies. Remaining intentional about our Asset Programs helps ensure that our electric facilities will function as intended. Thoughtful consideration of our Integrity Programs, including capital investment strategies and construction standards, will provide opportunities for our teams to target projects and asset investments that most significantly contribute to wildfire risk reduction. Connecting our teams and daily work activities as part of our Operational Response efforts will continue to promote a fire safe culture at Black Hills Energy while also driving down risk.

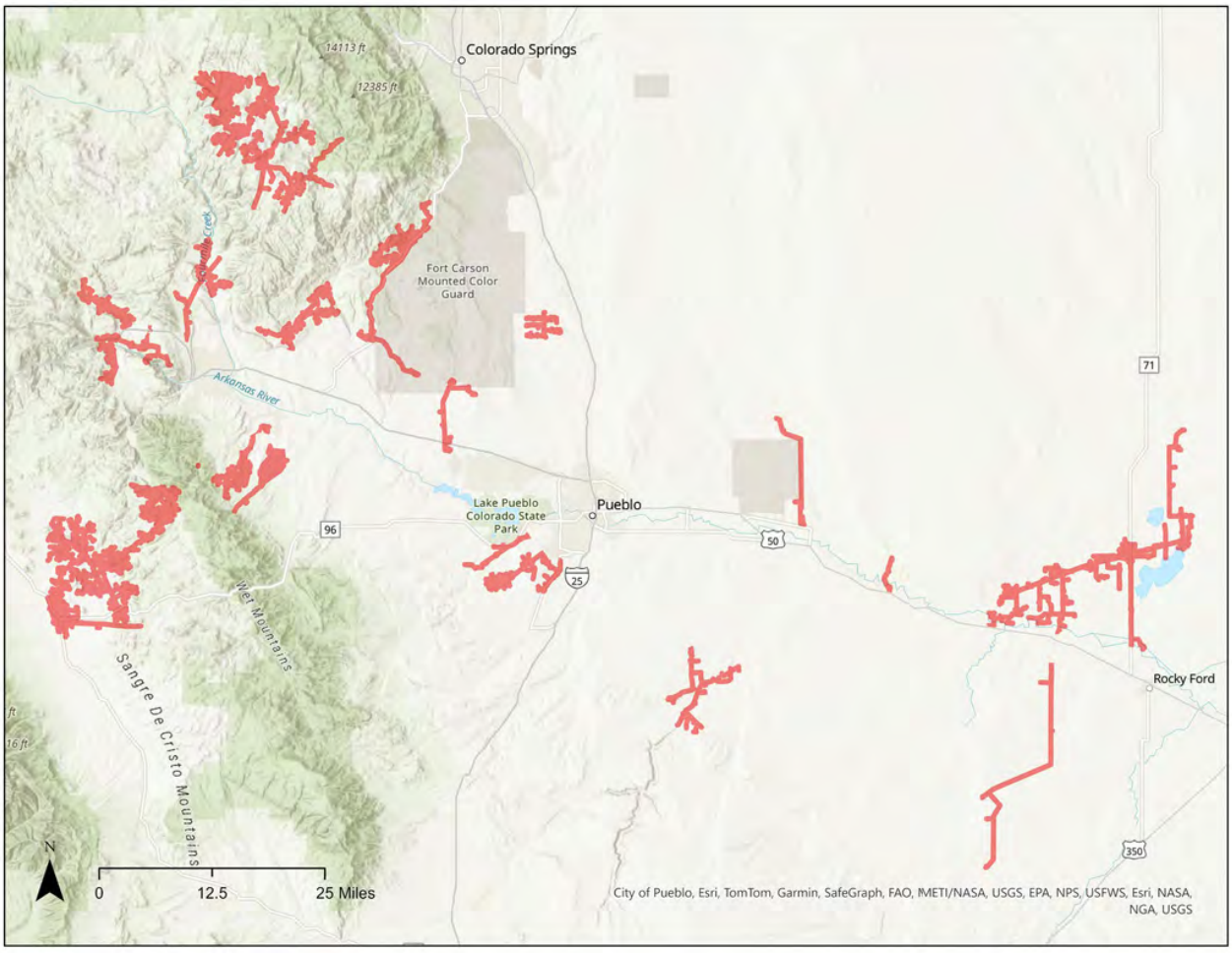
We will continue to update our WMP and communication efforts to ensure coordination with customers, emergency responders, communities, regulators and other stakeholders.

A.

Appendix A.

Emergency PSPS affected area maps

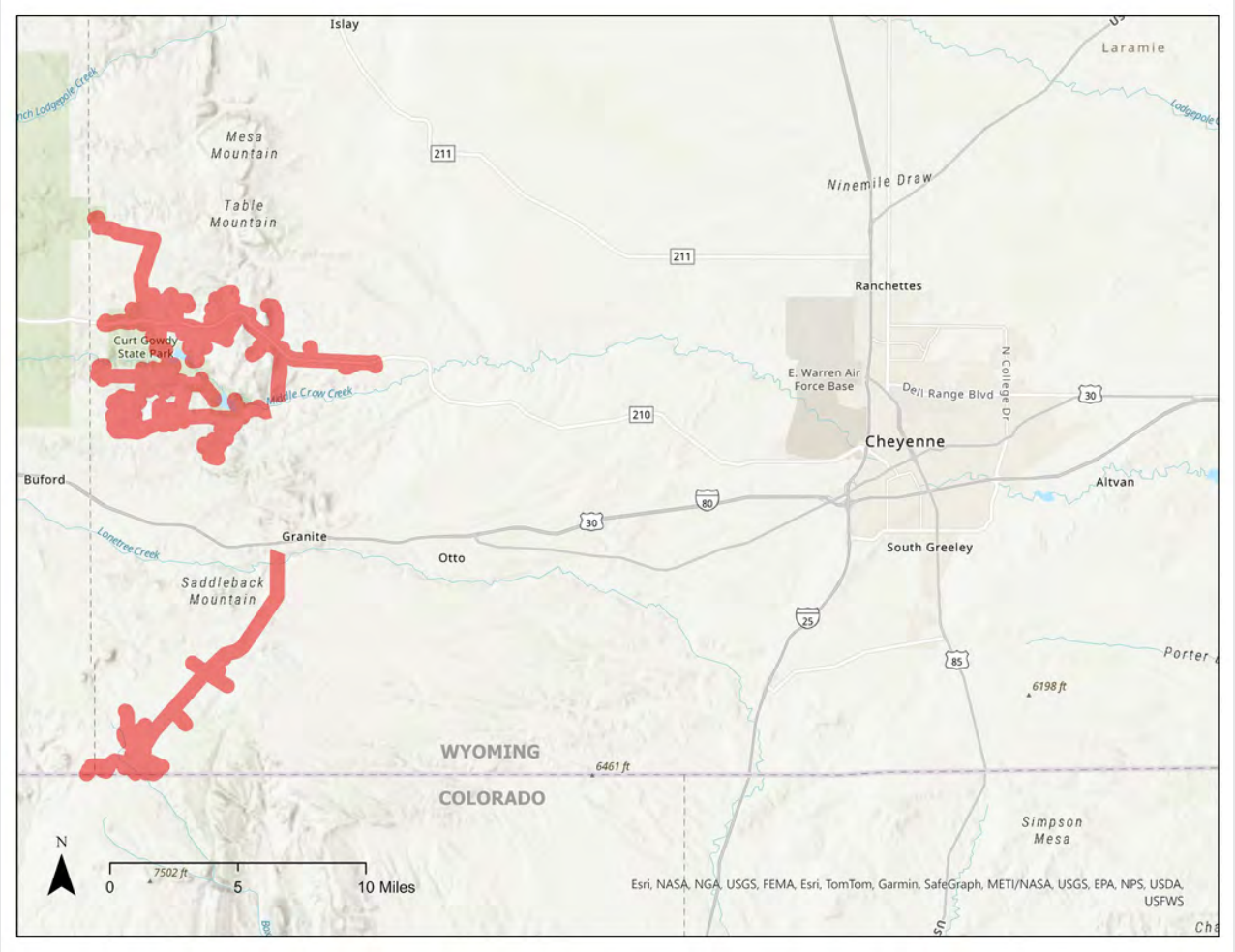
Emergency Public Safety Power Shutoff Affected Area - Colorado Electric



PSPS Estimated Affected Areas

Black Hills Energy

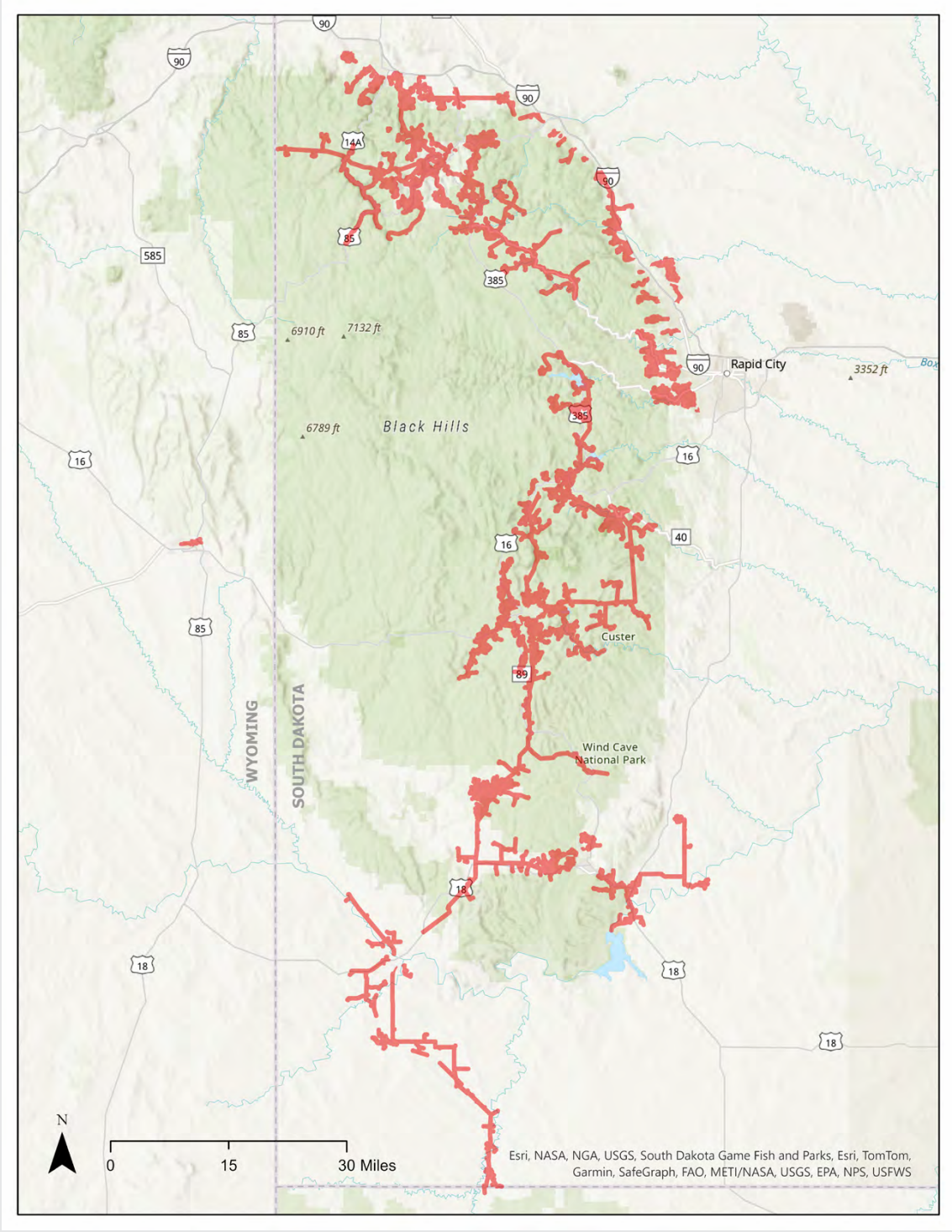
Emergency Public Safety Power Shutoff Affected Area - Wyoming Electric



PSPS Estimated Affected Areas

Black Hills Energy

Emergency Public Safety Power Shutoff Affected Area - South Dakota Electric



PSPS Estimated Affected Areas

Black Hills Energy

B.

Appendix B.

Definitions

Avian Protection Plan (APP): A utility-specific document that delineates a program designed to reduce the operational and avian risks that result from avian interactions with electric utility facilities.

Critical customers: Individuals, facilities and organizations whose loss of electric service could have a significant impact on health, safety, essential services or community stability. These customers and facilities are initially identified using the Cybersecurity and Infrastructure Security Agency's critical infrastructure sector framework and fall into categories such as emergency services (fire, law enforcement, 911 centers); communications (telecommunications switching centers, broadcast facilities); water and wastewater systems (treatment plants, pumping stations); transportation systems (airports, rail and major traffic control systems); or government facilities (operations centers, courthouses). Any list generated by the process described above is subject to additional refinement through company resources and direct engagement with facility operators.

Community Resource Groups: Local organizations, often nonprofit or volunteer-based, that provide support and services to individuals and communities during times of need. These groups may offer assistance such as emergency shelter, food, medical aid, mental health support, disaster relief and access to social services. Examples include local chapters or affiliates of the local chapters and affiliates of the American Red Cross, 211 helplines and other humanitarian or social service agencies.

Conductor: An object or type of material, usually a metal, that allows the free flow of electric current in one or more directions.

De-energized: A term used to describe an electrical conductor that does not have power flowing through it.

Distribution: The portion of the electrical system that delivers power to an end user.

Electric power distribution: The final stage in the delivery of electric power; it carries electricity from the transmission system to individual consumers.

Emergency Public Safety Power Shutoff (PSPS): A last resort method to reduce the chances of a Black Hills Energy facility causing a wildfire. It entails selectively and intentionally turning off power to a small portion of a service area when high risk fire weather and fuel conditions occur.

Energy Event Index (EEI): An index published by DTN (Weather Sentry) daily that tracks weather and wildfire condition. DTN's meteorologists watch wildfire conditions for each region or zone based on the current conditions and forecast to issue an EEI score using the following scale:

- Level 1 – Low: All parameters, especially burning index, are far better than risk thresholds.
- Level 2 – Moderate: Moderate winds are present and relative humidity is lower, stay aware.
- Level 3 – High: Higher winds are present and relative humidity is lower; monitor closely.
- Level 4 – Severe: Severe winds and low humidity are expected.
- Level 5 – Extreme: All factors indicate extreme wildfire risk.

Energized: A term used to describe the status of an electrical conductor as having power flowing through it.

Fault: Fault in electrical equipment or apparatus is defined as an imperfection in the electrical circuit due to which current is deflected from the intended path. In other words, the fault is an abnormal condition of the electrical system which can damage electrical equipment and disturbs the normal flow of the electric current.

Fire sweep: A crewmember tasked to perform periodic sweeps or walk-throughs of the work area looking for smoking or smoldering materials.

Fire Weather Watch (FWW): Issued when the combination of dry fuels and weather conditions support extreme fire danger, and a National Weather Service forecast confidence is high that Red Flag Warning criteria will be met within 72 hours. Often it will be issued before a Red Flag Warning.

Fresh tailboard: Tailboards may be known as Job Safety Analysis, Job Walk, Job Hazard Analysis, or other similar names. The intent of a tailboard is to discuss and document hazards that might be encountered during the day's work and mitigations appropriate for them. A fresh tailboard might be necessary when working conditions or activities change to the extent that review of the hazards and mitigations is necessary.

Hazard: Any real or potential condition that can cause injury, illness or death of personnel, or damage to or loss of equipment or property.

Hazard assessment: Assesses hazards to determine risks in terms of potential loss, cost or strategy and goals based on probability and severity.

Hazardous Fire Area (HFA): Geospatial polygon areas referencing wildfire risk categories that are set by analyzing and processing data from the WRO datasets focusing on utility-specific risk.

Ignition Management Plan (IMP): A structured process designed to harvest useful data from service calls and outages to help inform future risk reduction efforts.

Incident Command System (ICS): A standardized on-scene emergency management concept designed to allow its user(s) to adopt an integrated organizational structure without being limited by jurisdictional boundaries.

Incident Commander: Serves as the head of the ICT and has responsibility for the management of a PSPS with direct responsibility for making PSPS Power Off and restoration decisions.

Integrated Vegetation Management Plan (IVM): The ANSI A300 Part 7 defines (IVM as a system of managing plant communities in which managers set objectives, identify compatible and incompatible vegetation, consider action thresholds and evaluate, select and implement the most appropriate control method or methods to achieve their established objectives.

Liaison Officer: Ensures that agency representation is properly integrated into the PSPS response and may join an external agency's command center.

Logistics Chief: Responsible for ensuring that all resources and services needed to support incident operations are provided efficiently and effectively.

Medically sensitive customers: Individuals who rely on electricity for medical purposes. This can include customer reliance on electric powered medical equipment or other life-sustaining devices.

Non-expulsion: A term used to describe an electrical fuse that will not emit sparks out of its cartridge during a short circuit.

Offices of Emergency Management (OEM): OEMs include local, state, tribal or federal organizations that assist with planning for, responding to and recovering from disasters. These are typically governmental offices or agencies.

Operations Chief: Responsible for managing the tactical operations of the teams that will execute the specific action plan for an Emergency PSPS event. The Operations Chief will also ensure that adequate staff are available to support an Emergency PSPS.

Phase-to-ground: Voltage which exists between a single phase of a power system and ground.

Power Off: Anticipated de-energization.

Public Information Officer: Manages communications between the ICT and the public, media, customers and other stakeholders

Public Safety Partners: Public Safety Partners include entities such as first response providers, including fire protection districts, county sheriffs and local police departments.

Recloser: An automatic, high-voltage electric switch. Like a circuit breaker on household electric lines, it shuts off electric power when trouble occurs, such as a short circuit.

Red Flag Warning (RFW): A weather condition issued by NWS when weather and fuel conditions combine to produce critical burning conditions where fires can grow rapidly and may be difficult or impossible to control.

Risk: The chance of fire starting as determined by the presence and activity of causative agents and/or the chance of suffering harm or loss.

Safety Officer: Responsible for planning safety communications, coordinating safety activities and developing and implementing a safety plan for employees, customers and the public.

Situational awareness (SA): Awareness of current conditions and the anticipated future events that could happen given the elements in the environment. For example, the heat, fuel and oxygen sources in an area viewed at a particular time can lead to the conclusion that a fire is likely to happen.

Substation: A substation is a part of an electrical generation, transmission and distribution system. Substations transform voltage from high to low, the reverse or perform any of several other important functions. Between the generating station and consumer, electric power may flow through several substations at different voltage levels.

Supervisory Control and Data Acquisition (SCADA): A system of software and hardware elements that allows industrial organizations to 1. Control industrial processes locally or at remote locations 2. Monitor, gather and process real-time data 3. Directly interact with devices such as sensors, valves, pumps, motors and more through HMI software and 4. Record events into a log file.

Transmission: A system of structures, wires, insulators and associated hardware that carry electric energy from one point to another in an electric power system. Lines are operated at relatively high voltages varying from 69 kV up to 765 kV and can transmit large quantities of electricity over long distances.

Wildfire: A destructive fire that spreads quickly over woodland or brush where the goal is to put the fire out.

Wildland Urban Interface (WUI): The line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

C.

Appendix C.

Acronyms and naming glossary

ANSI: American National Standards Institute

APLIC: Avian Powerline Interaction Committee

APP: Avian Protection Plan

BHCOE: Black Hills Colorado Electric, LLC

Black Hills Energy: Black Hills Corporation's three electric utility operating companies Black Hills Power, Inc., Cheyenne Light, Fuel and Power Company and Black Hills Electric Colorado, LLC

Black Hills Power: Black Hills Power, Inc.

Cheyenne Light: Cheyenne Light, Fuel and Power Company

CFL: Conditional Flame Length

CI: Continual Improvement

CISA: Cybersecurity and Infrastructure Security Agency

Colorado Electric: Black Hills Colorado Electric, LLC

DSIP: Distribution System Integrity Program

EEI: Energy Event Index

FEMA: Federal Emergency Management Agency

FWW: Fire Weather Watch

GIS: Geographic Information System

HFA: Hazardous Fire Area

HMI: Human-Machine Interface

ICS: Incident Command System

ICT: Incident Command Team

IEEE: Institute of Electrical and Electronics Engineers

IMP: Ignition Management Plan

ISA: International Society of Arboriculture

MVCD: Minimum Vegetation Clearance Distances

NERC: North American Electric Reliability Corporation

NESC: National Electric Safety Council

NOAA: National Oceanic and Atmospheric Administration

NWS: National Weather Service

OEM: Offices of Emergency Management

PSPS: Emergency Public Safety Power Shutoff

RAWS: Remote Automatic Weather Stations

RFW: Red Flag Warning

ROW: Right(s)-of-Way

RUS: Rural Utility Service

SA: Situational Awareness

SCADA: Supervisory Control and Data Acquisition

South Dakota Electric: Black Hills Power, Inc.

USFWS: United States Fish and Wildlife Service

U.S.: United States

WHP: Wildfire Hazard Potential

WMP: Wildfire Mitigation Plan

WRO: wildfirerisk.org

WUI: Wildland Urban Interface

Wyoming Electric: Cheyenne Light, Fuel and Power Company

D.

Appendix D.

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