NV Energy Natural Disaster Protection Plan

January 2020

NVEnergy

Company Overview

- NV Energy has served the citizens of southern Nevada since 1906 and northern Nevada for more than 150 years.

- Service area covers nearly 46,000 square miles and about 90 percent of the state's population
  - Nevada Power Company in Southern Nevada
  - Sierra Pacific Power Company in Northern Nevada

- More than 1.4 million customers and a state tourist population of nearly 50 million annually
  - 1.29 million electric
  - 168,000 gas

- More than 2,470 employees statewide

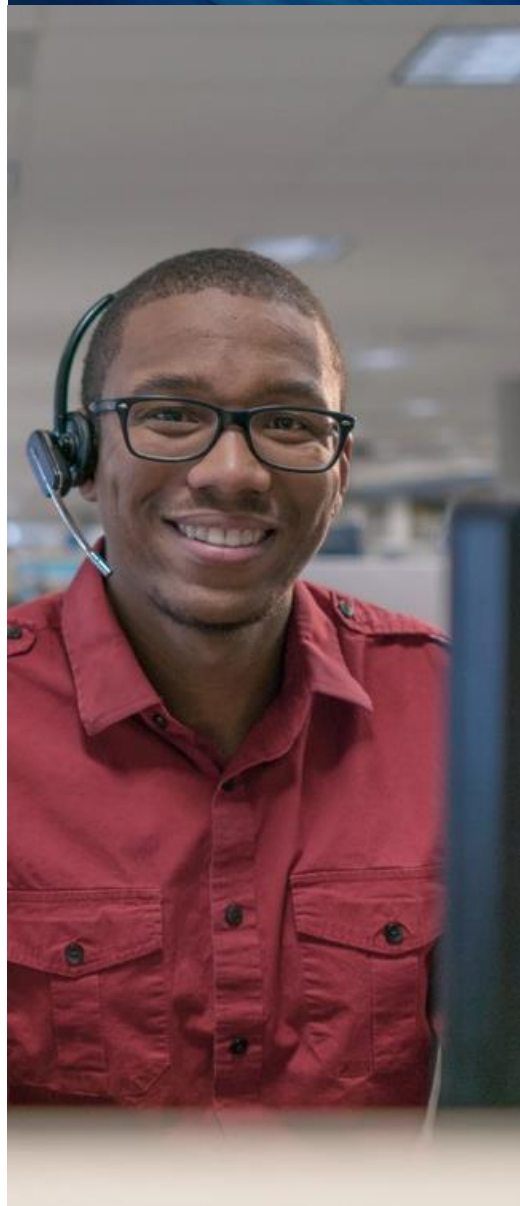
Customer Service

WE PRIDE OURSELVES ON EXCEPTIONAL SERVICE

- NV Energy offers a wide variety of billing and payment options that make it easy to pay your energy bill
    - MyAccount
    - FlexPay
    - Equal Pay
    - Paperless Billing

- Our customer service team is available around the clock to answer your questions and provide assistance.

- Visit nvenergy.com to learn more.



Sustainability & Renewable Energy

NV ENERGY LEADS THE NATION IN LOW-COST RENEWABLE ENERGY

- Today, customers are served by 54 large-scale clean energy projects statewide, both in service and in development.
- We have nine new solar energy projects totaling 2,191 megawatts and nearly 690 megawatts of battery energy storage systems currently in development to help meet the future needs of NV Energy customers.
- These projects ensure that NV Energy will exceed its promise of doubling renewables by 2023, and continue the drive to meet Nevada's new renewable portfolio standard of 50 percent by 2030 while keeping rates stable for customers.
- These projects also represent a step forward in meeting the company's long-term goal of serving Nevada customers with 100 percent renewable energy.

Ensuring Reliability

- We aim to deliver industry-leading service each day - including in times of extreme weather.
- We work year-round to maintain and improve our electric system.
- Last year alone we invested more than $280 million in over 10,400 projects.

Natural Disaster Protection Plan

Senate Bill 329 (prevention of natural disasters), which was passed by the 2019 Nevada Legislature, requires a focused assessment of NV Energy's electric grid to develop a Natural Disaster Protection Plan ("NDPP") to be submitted to the Public Utilities Commission of Nevada, due March 1, 2020

- Identifies outreach for key aspects of the plan

- Identifies partnerships, represented in the experts here today

Today's Objectives

These public meetings provide a forum for the open exchange of ideas surrounding NV Energy's electric grid Natural Disaster Protection Plan (NDPP). The benefits of this open and collaborative approach include:

1. Enhance community understanding and preparedness
2. Identify any questions during the NDPP development phase
3. Satisfy SB 329 outreach and review requirement
4. Assure an actionable plan for future coordination and communication

SB 329 Identified Experts

NV Energy thanks the following organizations for their expert input:

- Local & Regional Fire Districts
- NV Dept. of Public Safety, Division of Emergency Management
- Emergency Managers; Counties & other authorities
  - (Washoe, Douglas, Tahoe area, Mt. Charleston area, Tribal Governments)
- NV Divisions of Forestry
- Telecommunication Companies
  - AT&T, Century Link, Sprint/Nextel, T-mobile, Verizon Wireless
- NV Division of Lands
- NV Division of State Parks
- NV Dept. of Conservation & Natural Resource Management

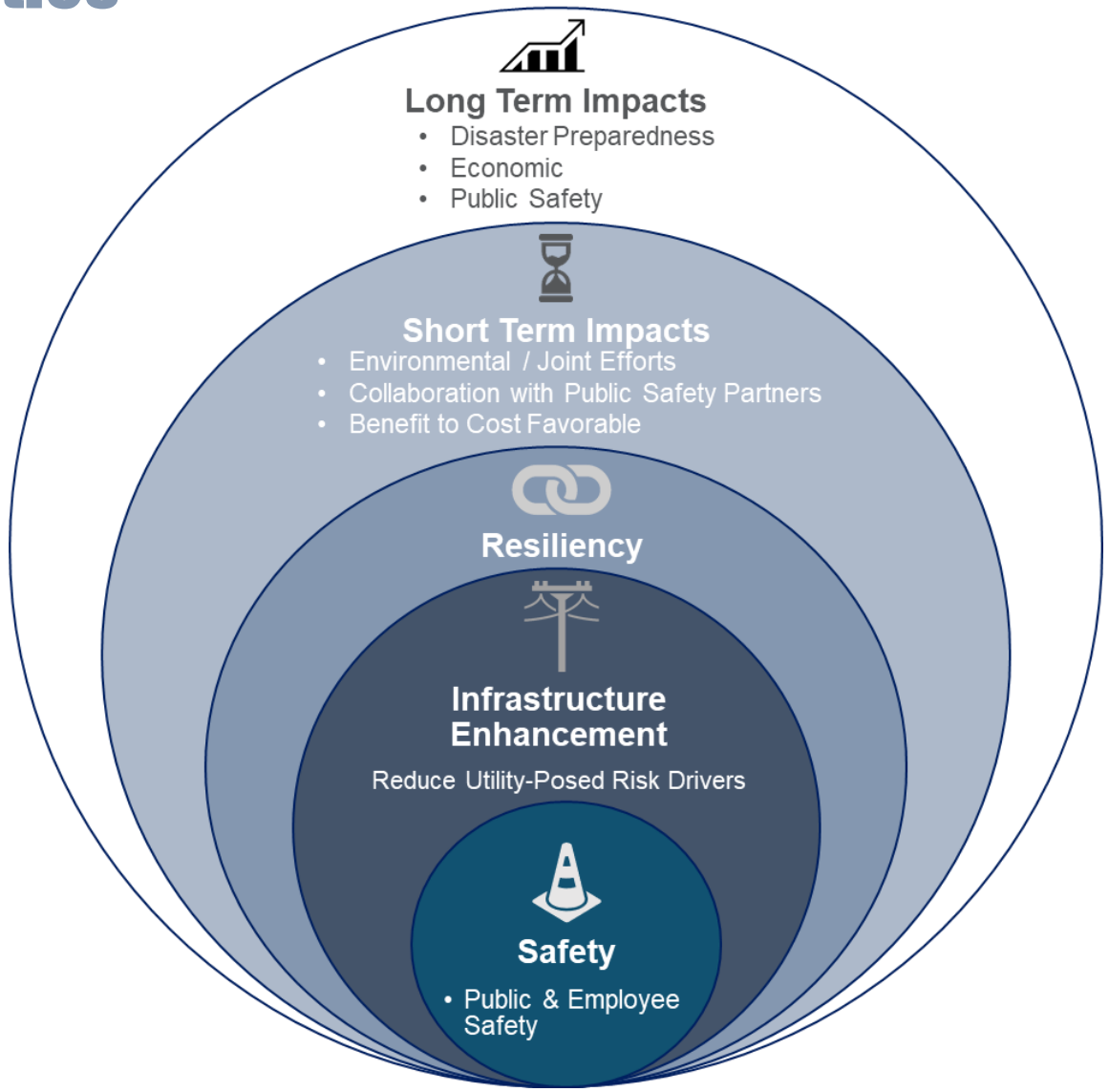
Public Outreach Meetings

Northern Nevada	
RENO **Monday, January 27, 2020** 5:30 - 7:30 p.m. Peppermill Hotel & Casino Tuscany 5 & 6 2707 S. Virginia St. Reno, NV 89502 **ELKO** **Tuesday, January 28, 2020** 5:30 - 7:30 p.m. Red Lion Hotel Casino Humboldt Room 2065 Idaho St. Elko, NV 89801	**SOUTH TAHOE** **Wednesday, January 29, 2020** 5:30 - 7:30 p.m. MontBleu Resort Casino & Spa, Aspen Ballroom 55 Highway 50 Lake Tahoe, NV 89449 **NORTH TAHOE** **Thursday, February 6, 2020** 5:30 - 7:30 pm Parasol Tahoe Community Foundation, Trepp Room 948 Incline Way Incline Village, NV 89451 *(Facebook Live broadcast planned)*

Southern Nevada	
MT. CHARLESTON **Monday, Feb. 3, 2020** 5 - 7 p.m. The Retreat on Charleston Peak 2755 Kyle Canyon Rd. Mt. Charleston, NV 89124	**LAS VEGAS** **Tuesday, Feb. 4,** **2020** 5 - 7 p.m. East Las Vegas Library 2851 East Bonanza Rd. Las Vegas, NV 89101 *(Facebook Live broadcast planned)*

Natural Disaster Protection Plan Priorities

- Focus on asset-related public safety
- Analyze using risk-based mitigation
- Consider immediate resiliency needs
- Plan short term improvements
- Project long term enhancements



Natural Disaster Protection Includes

Aligning actions and options, related to NV Energy's electric assets

the Plan is a 'living document' to refine and mature.

Plan Structure

The draft regulations require the plan to be structured as follows:

A. **RISK-BASED APPROACH** - Use modeling to identify geographic areas, including where electrical facility could spread and grow into a significant wildfire

B. **OPERATIONAL PRACTICES** – Field and systems operations practices used to mitigate wildfire risk, including field procedures, reclosing strategy and no-test policy

C. **INSPECTIONS AND CORRECTIONS** – Inspection frequency, identification of fire-risk conditions and correction time frames are designed to mitigate against utility ignition

D. **SYSTEM HARDENING** – Equipment with less ignition risk used; categories include covered conductor, poles, non-expulsion cutouts, relays, pole wrap and protective devices

Plan Structure (continued)

E. **MANAGEMENT** – Vegetation management practices focused on clearance distances and removal of hazard trees to minimize the chances of vegetation striking lines, removal of ground vegetation in easements, pole grubbing and fuel breaks

F. **SITUATIONAL AWARENESS** – Information about fire conditions can help guide other mitigation measures, including fuel mapping and information from weather stations and cameras

G. **PROACTIVE DE-ENERGIZATION** – Under extreme wildfire weather conditions, proactive de-energization of pre-identified circuits, or sections of circuits, to mitigate against potential electric facility-caused ignitions

The Plan's goal is to mitigate ignition and other natural disaster risks while minimizing Public Safety Outage Management occurrences.

Natural Disasters for Risk Assessment

Natural Disasters	Assumptions / Comments
Grassland fires / Wildfires	**Tier 1 Elevated** (includes historical fire events) / **Elevated Risk (Tier 2)**: 2-5 miles from assets; sparse vegetation with fuel loading, areas with population density between 1,000 to 3,999 per sq. mile, between 98th and 90th percentile Fosberg Fire Weather Index / **Extreme Risk (Tier 3):** within one mile from assets/facilities, telecommunication assets, large and dense vegetation areas including fuel loading, population density of 4k per sq. mile including the WUI, areas with 98th percentile Fosberg Fire Weather Index
Blizzards / Snow Storms / Winter Storms	**In development**: Profiled with blizzard events in affected counties over 50 years, including wind path events, heavy snow, and winter storm events. Risk is higher in the North and the Mt. Charleston area.
Wind Events	Historic wind paths that reach up to 116 miles per hour, and exists as a common risk driver for other associated disasters or as an exacerbating concern relating to risk consequence.
Earthquakes / Seiches	Historic event frequency (<15k Yrs) overlaid with active faults identifying those that are of greatest magnitude potential layered on NVE facilities and assets. Seiches can be a rare consequence of a high magnitude earthquake near the Lake Tahoe Basin.

Natural Disasters for Risk Assessment (continued)

Natural Disasters	Assumptions / Comments
Monsoons / Floods / Precipitation	Includes FEMA flood zones and **100** year events layered on NVE assets and facilities. Precipitation levels and monsoon incidents also provide additional layers to the mapping exercise.
Microbursts / Thunder Storms	Includes high wind path events and occurrences of lightning recorded where damage/injury resulted. Microbursts are a rare occurrence particularly impacting Southern Nevada. Impact is severe, though likelihood is low
Landslides / Avalanches	Avalanche risk is high in the Northwest. Risk zone identifies the historic event profile of landslide events in the state as well as avalanches due to heavy snow in the North.

Risk Assessment includes:

1. What consequences result from triggering events?
2. What are long-term mitigation strategies that NVE can adopt?
3. Do strategies have overlapping risk reduction across multiple natural disasters?
4. Assess the likelihood and impact of each natural disaster?

Also Considered Natural Hazards

3-Year Update

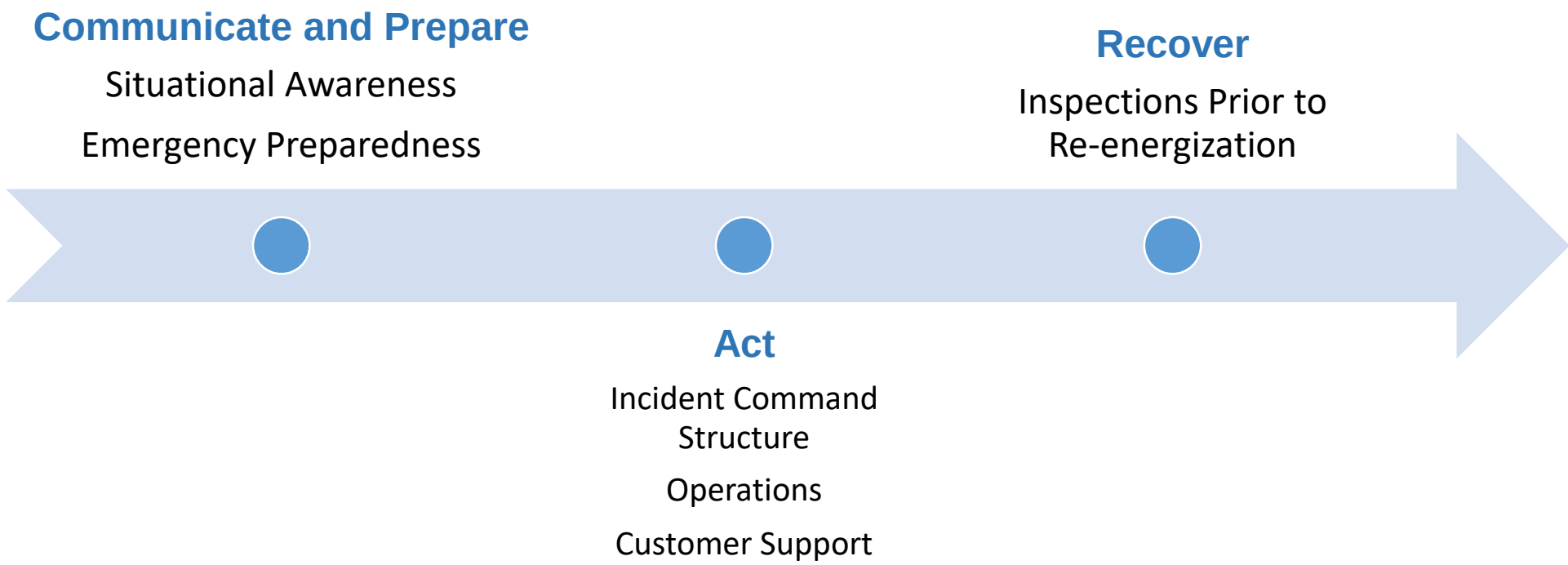
- Tornadoes
- Severe Hail
- Volcanic Eruption
- Land Subsidence
- Droughts / Heat Waves

Future Comprehensive Update

- Naturally-occurring gas release (radon)
- Solar flares / CMEs
- Hurricanes
- *Human Disasters – out of regulatory scope*

Proactive De-Energization (Public Safety Outage Management)

- Used as a last resort
- Communication as far in advance as possible
- Ongoing efforts to improve coordinated response and grid sectionalization
- Inspection before returning to service; qualified personnel used varies



Tabletop Themes

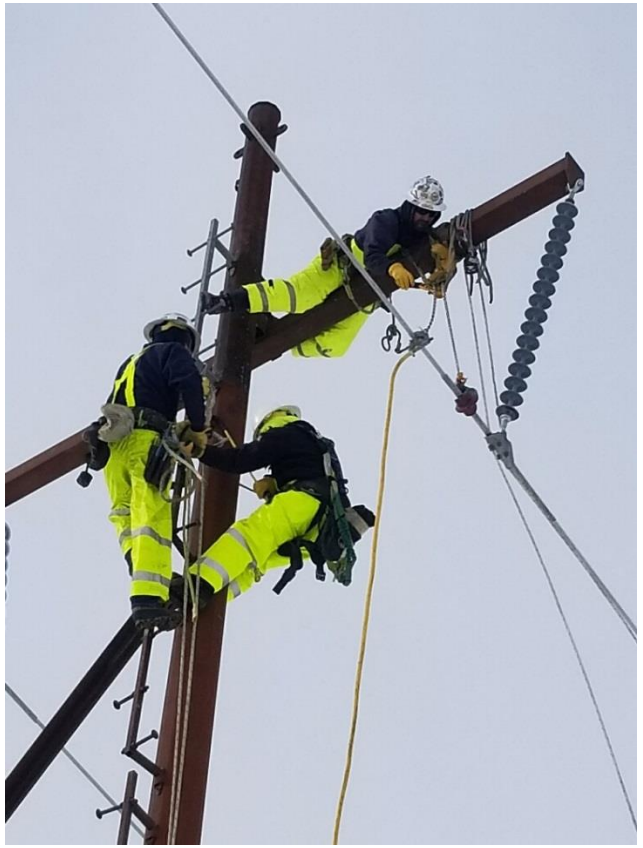
- Grid Resiliency
- Vegetation Management
- Operational Practices: Inspections and Corrections, Situational Awareness
- Risk Based Assessment and Public Safety Outage Management

Tabletop Themes

Grid Resiliency

System Hardening

- **Introduce more isolation points (segregation) of the system**
- **Create and file plans and obtain approval to specifically modify Tahoe and Mt. Charleston plans with a combination of ruggedized overhead, covered wire aerial systems, and increased undergrounding**
- **Evaluate technologies to ruggedize and de-risk existing systems, including fuse replacement, fire-proof barriers, and sturdier, non-flammable transmission poles**



Tabletop Themes

Vegetation Management

Vegetation Management

- Create, file and obtain approval for specific VM cycles and coverage in Tier 3 and Tier 2 areas
- Continue work in Tahoe and Truckee to achieve a four year cycle vs current nine year cycle
- Introduce pole grubbing into all tiered wildfire risk zones and NVE service territory outside of risk zones through partnerships with other agencies
- Cooperate with local, state, and federal agencies to sync vegetation management and develop a state-wide system of fuel breaks using existing grid and roadway infrastructure
- Assess health of range lands, forests, and fuel tonnage per acre through mapping programs encompassing all service territory

Tabletop Themes

Operational Practices: Inspections and Corrections, Situational Awareness

Operating Practices

- **Specific Northern Nevada circuits (not just Tier 3 areas) are set for fire season operational mode. Automatic reclosers are disabled and any trip (including transmission) requires patrol before reclosing. Mount Charleston is currently in the same configuration.**
- **NV Energy will continue with these seasonal settings in 2020 and increase cooperation with Liberty for the Lake Tahoe area**

Tabletop Themes

Operational Practices: Inspections and Corrections, Situational Awareness

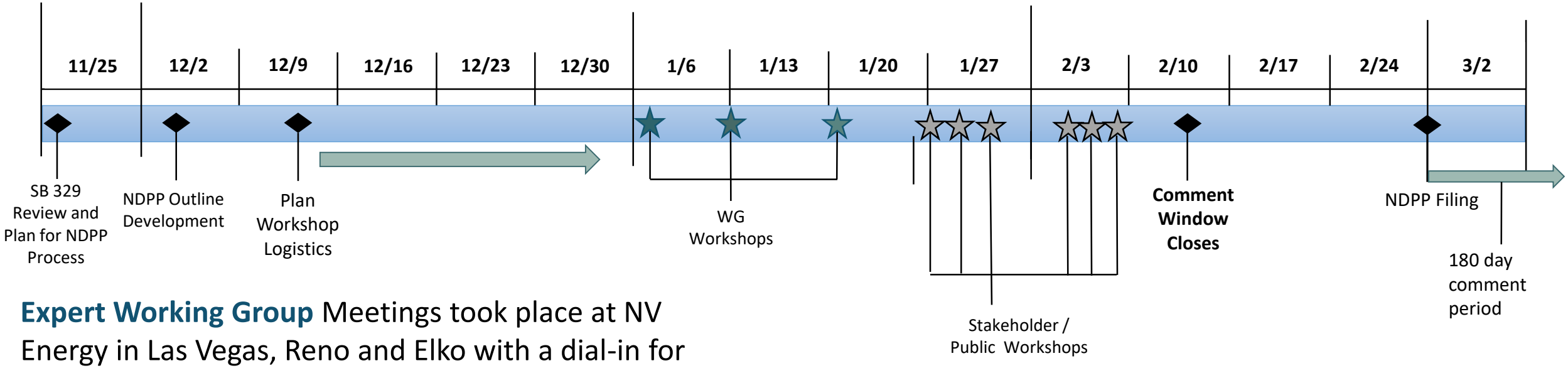
Inspections and Corrections	• Build upon wildfire safety inspection completed in 2019 through follow-up on priority 1 and 2 jobs and to achieve compliance with patrol/detailed inspection requirements proposed in the NDPP • Create, file, and receive approval for specific maintenance and inspection standards through the NDPP
Situational Awareness	• Create, file, and obtain approval for additional meteorological stations • Continue investment in UNR wildfire camera system • Emergency Management moving to Operations and integrate fire specialist and meteorologist into real-time environment

Tabletop Themes

Risk Based Assessment and PSOM

Risk-Based Approach	• As part of the 2020 Natural Disaster Protection Plan (“NDPP”) filed with the Public Utilities Commission of Nevada, NV Energy will document the wildfire risk mapping criteria (i.e., wildfire hazard potential, urban interface or density, fire weather index and ignition risk) along with the definition of either proactive de-energization zones • Continue to review and update risk tier mapping with University of Nevada, Reno (“UNR”) and REAX Engineering to remain current • Review disasters included based on three year updates to risk profiles (e.g. tornados, hail, heat events that are currently excluded but may be subject to a shifting climate)
Proactive De-Energization (PSOM)	• Continue building on customer awareness and communication tools/methods • Focus on assuring telecommunication networks are powered • Create, file and gain approval of telecommunication network improvements in northern Nevada • Expand communications capabilities through system upgrades and additional mobile communications units where determined necessary • Understand communications plan with telecommunication entities

NDPP Engagement and Outreach Timeline



Expert Working Group Meetings took place at NV Energy in Las Vegas, Reno and Elko with a dial-in for remote participants. Each meeting takes a deeper look at the plan, with ongoing participation.

Occurred on:

- January 7th
- January 13th
- January 21st

Public Stakeholder Meetings will be in the form of an open forum to engage public on the Plan's progress and consider feedback while educating on key areas such as PSOM.

Locations:

1. Reno
2. Elko
3. North Lake Tahoe
4. Mt. Charleston
5. Las Vegas
6. South Lake Tahoe

Next Steps

Please visit our experts to:

- Establish a common understanding of NV Energy's electric grid natural disaster protection plan
- Explore identified natural disasters
- Educate and inform stakeholders
- Provide feedback on plans and ideas
  - Complete feedback form and return today
  - Email feedback to ndpp@nvenergy.com by February 1, 2020

Comments and Feedback

Provide today or send feedback to NDPP@nvenergy.com

Category or Topic	Stakeholder	Issue / Comment	Proposal / Idea

CONTACTS

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