

# Staff Ride

## Resources



Wildland Fire Leadership Development Program

## Cerro Grande Fire, Upper Frijoles Prescribed Burn— Field Reference, July 2005

**Note to Facilitators:** This is a suggested format. Do not feel limited by the identified stands or discussion items. It is provided as a word document so that users may adapt and revise it to fit their specific audience and time demands.

### Staff Ride Difficulty Rating:

#### Physical:

**Arduous** – This Staff Ride is considered arduous due to steep climbs and high elevation (8,900 to 10,200 feet elevation). Footing can be difficult on slopes due to clump grass, logs, and rocks, especially when wet. There are no established trails between any of the stands. The entire circuit will require 3-4 hours of actual hiking time.

#### Logistics:

**Moderate** – The Staff Ride is adjacent to New Mexico State Highway 4 and located approximately 12 miles west of Los Alamos, New Mexico. Paved roads provide access to the lower portion of the Staff Ride, Stands #1 and #5. Stands #2, #3, and #4 are accessible only by foot. The staff ride is located on the National Park Service – Bandelier National Monument property. In order to access the area, advanced permission must be obtained from Bandelier National Monument prior to arrival. They may require a park liaison accompany the group during the Staff Ride.

Lodging and meeting accommodations are limited in the local area, but may be arranged at a few hotels in Los Alamos or White Rock.

#### Hazards

**Moderate** – The primary concerns are snag and hazard trees. Hard hats are required during the Staff Ride. The terrain between stands is very steep and uneven. Footing can be hazardous especially between Stand #2 and Stand #4 due to the clump grasses and slope. The high elevation (8900' to 10,199') may require extra time for foot travel. Due to the nature of the hike, an arduous fitness level is recommended. Participants should also bring drinking water and food to mitigate dehydration concerns.

## Stand #1 –Frijoles Canyon Overlook

### Maps

Land Ownership Map

Topo Map with stand locations

### Access

- From Los Alamos take State Highway 501 to the intersection of State Highway 4.
- Turn west (right) on State Highway 4 and proceed to Frijoles Recreation Area parking (approximately 12 miles from Los Alamos).
- Turn right (north), off State Highway 4 into parking area.
- Stands #1 is south of the State Highway 4 overlooking Frijoles Canyon.

### Terrain Orientation

- The Monument is bordered to the north and west by Valles Caldera Trust (formally known as the privately owned Baca Ranch)
- East of the Monument approximately 3 miles is the Los Alamos National Laboratory
- Communities of Los Alamos and White Rock are approximately 5 and 10 air miles to the northeast and east, respectively
- The Monument is bordered to the south, east, and northeast by Santa Fe NF
- Frijoles Canyon runs north to south through the prescribed fire area
- Cerro Grande Peak (10,199 ft); west saddle; east ridge
- State Highway 4

### Events to Describe

- General fuel conditions, fire history, fire activity, and fire behavior, spring 2000.
- Upper Frijoles Units 1 through 5 prescribed fire burn plan.

### Discussion Guide

- Northern New Mexico is in a drought during the early months of 2000. The Palmer Drought Index for early May (2000) shows northern New Mexico to be in a moderate drought. Several weather stations near Bandelier National Monument have recorded below normal precipitation every month from October 1999 through April 2000, except for a wet spell in late March (2000). Winter snow pack is well below normal, with the local ski area not opening the entire season. From mid-March to mid-April, three snow events occurred. One storm dropped 16" of snow.
- In the southwest general winds are predominately from the west/southwest. In mountainous terrain winds are topographically driven. Winds in this area follow the path of least resistance, the highway corridor, and through the saddles and gaps. Funneled winds result in higher eye level wind speeds.

- Fire history
  - 1977-La Mesa Fire; first fire to threaten the city of Los Alamos and the Los Alamos National Laboratory (10 days to control, 15,300 acres). Did not serve as a wake-up call for the community.
  - 1996-Dome Fire; threatens the city of Los Alamos and the National Laboratory. First wake up call for the community...a local interagency working team was established as a result of this fire.
- Activities in the Geographic Area prior to Upper Frijoles Prescribed Burn.
  - One Type 1 Incident Management Team is assigned in Arizona, the Geographic Area is in preparedness level 3.
  - Prescribed burning is being conducted in the Zone.
  - Bandelier National Monument conducted a prescribed burn near the Monument Headquarters a couple weeks earlier, and experienced no holding problems.
  - On April 28th dry lightning ignited 12 fires between 8500-9500 feet elevation. Some of the fires were initial attacked that evening, others staffed the following day. Fire behavior on all fires was reported as minimal, and did not lead managers to believe there would be problems with fire behavior. The largest fire was 4 acres.
  - May 4th Santa Fe National Forest stops all prescribed burning. Park Service burn personnel are not aware of this decision.
- Prescription parameters for the Upper Frijoles Rx Project are set to establish a relatively wide window of opportunity to facilitate burning across diverse vegetative profile including reducing tree densities and fuel loadings. Modeled fire behavior and fire effects are adequate.
- The primary purpose of the prescribed fire is to reduce hazardous fuels in the burn unit while allowing fire to be restored as a keystone natural process.
- The primary fire management concern in the Monument is Upper Frijoles Canyon. The Monument's concern is centered on the potential of a fire during extreme conditions that would burn off the Monument and threaten Los Alamos and the National Laboratory. The Monument's strategic plan is to begin fuels treatments at the top of the Upper Frijoles Watershed and work down canyon to Monument Headquarters. Initial planning to treat Frijoles Canyon had begun around 1985.
- The various agencies and individuals on the prescribed fire notification list are contacted. The Holding Boss notifies the Santa Fe Zone Dispatch Office and the National Weather Service.
- Spot weather is requested and received on May 4, 2000, at 1220 hours. It reads:
  - Haines Index 6, poor nighttime recovery
  - Discussion- free air winds will increase slightly out of the west tonight and on Friday which will make surface winds stronger and more westerly on Friday.
  - Tonight.. clear and mild with poor RH recovery. Minimum temps near 45. RH remaining in 15-20 percent range through about 2000 hrs., with max RH @ 25-30 percent from midnight on. 20 foot winds northwest 10-15 mph ridge tops, down slope 4-8 remainder of the day.

- Outlook for Friday.. sunny. Continued very warm and dry. Little change in temperatures (72-76). Minimum RH down 1-3 percent. 20 foot winds westerly 10-15 mph with afternoon gusts to near 20 mph ridge tops, becoming southwest 10-15 mph at lower elevations.

## **Handout Tactical Decision Game #1**

## Stand #2 – Baca Ranch Boundary (Valles Caldera Trust)

### Maps

Land Ownership Map

3D Relief Map with ignition sequence

### Access

- NAD 27 GPS Coordinates: 35.51.872 x 106.25.050
- From Stand #1, travel north on foot up Frijoles Canyon drainage and up the southeast facing slope to the saddle southwest of Cerro Grande Peak.

### Terrain Orientation

- Baca Ranch to north and west of saddle
- Cerro Grande Peak to northeast
- Santa Fe NF adjacent to Monument to the east and south
- Town of Los Alamos to east
- Los Alamos Laboratory to east

### Events to Describe

- Resources assigned to project
- Test fire location and results
- Ignition and holding plans

### Discussion Guide

#### Conduct Tactical Decision Game #1

- The burn is in the northwest corner of the Monument, and encompasses approximately 1,000 acres. The Monument boundary is Cerro Grande Peak. The project is broken into three phases:
  - Phase one 200-300 acres. Located in the upper part of the burn in the grasslands (top of mountain). Vegetation is montane grasslands FBFM1.
  - Phase two 300-600 acres. Located in the timbered areas in the burn perimeter (east and west flanks) in the drier aspects. Implementation of this phase will occur shortly after or concurrently with phase one. Vegetation is ponderosa pine/mixed conifer FBFM 2/9.
  - Phase three 100-500 acres. Located in the wetter areas in the bowl. This phase will be delayed until extremely dry conditions develop. Vegetation is mixed conifer/ponderosa pine FBFM 8.
- No handline is constructed on the east perimeter in the grass down the ridgeline. However, there is handline is constructed on the east perimeter where the grass

transitions into ponderosa pine down to State Highway 4. A saw line is constructed on the west perimeter from Cerro Grande Peak to State Highway 4.

- This area was burned in 1993. The burn was not as successful as planned, as much of the area within this unit is inherently moist and did not burn well.
- Burn plan prescription parameters are for a wide window of opportunity to facilitate burning across diverse vegetative profiles. The prescription calls for reducing tree densities and fuel loadings. Key prescription parameters are; temperature 40-90 degrees, RH 15-50%, MFWS 0-8 mph, and 1hr fuel moistures 3-8%.
- In the meadow, near Highway 4, the Burn Boss conducts a thorough briefing to assigned resources (a 10-person Type II crew and 10 Park Service employees). After the initial briefing all personnel begin hiking up the east ridge (perimeter) to Cerro Grande Peak, after approximately 2.5 hours the summit is reached. At approximately 1900 at the top of the Cerro Grande Peak an additional operational briefing occurs, and the National Weather Service is contacted confirming the spot weather forecast is still accurate.
- At approximately 1930 the evening of May 4, 2000 the test fire is ignited near the summit of Cerro Grande Peak. The test fire is successfully completed, and the fire behavior is within expected parameters. The go-decision is made to continue the prescribed fire by the burn boss.
- The holding crew is instructed to use backpack pumps, spruce bows, and changes in fuels and terrain to limit fire spread during blackline operations.
- Blackline operations begin down the east perimeter from the test fire. Progress is slow using the ignition and holding plan outlined in the burn plan (suppressing both the interior and exterior portions of the blackline).

### **Handout Tactical Decision Game #3**

#### **CONSIDER TAKING A LUNCH BREAK ON CERRO GRANDE PEAK**

- Topography and fuel transitions
- Agency boundaries
- Proximity of Los Alamos and Los Alamos National Laboratory
- Prescribed fire project perimeter
- Approximate location of test fire

## Stand #3 – East Ridge of Cerro Grande Peak

### Maps

- 3D Relief Map with ignition sequence

### Access

- NAD 27 GPS Coordinates: 35.50.776 x 106.24.072
- From Cerro Grande Peak, continue southeast along east perimeter.

### Terrain Orientation

- Cerro Grande Peak
- Los Alamos and Los Alamos National Laboratory

### Events to Describe

- Fatigue Management
- Tactics on east and west flanks
- Fire behavior

### Discussion Guide

#### Conduct Tactical Decision Game #2

- The decision is made to change the holding plan to speed up the blackline operation.
  - The Burn Boss decides to stop suppressing the fire on the interior side of the black line. The interior backing fire is allowed to burn downhill. Individual torching of trees is observed, which is a desired fire effect.
- The modified blackline operation continues down the east flank and is completed at approximately 2200 hours.
- At approximately 2200 hours the Burn Boss walks back to the test fire area. Upon reaching this area discovers the fire is backing southwest into the canyon faster than anticipated.
- The decision is made to suppress the fire burning outside the test fire area and begin ignition operations down the west perimeter of the unit into the saddle.
  - At approximately 2300 hours the ignition crew (3-individuals) and the 12-person holding crew return to the test fire area to complete this operation.
  - Two additional personnel arrive and are assigned to the east perimeter.
- At approximately 2315 hours ignition operations begin down the west flank into the saddle. Operations on this west flank were completed at approximately 0230 hours.
- At about 2400 hours the Burn Boss is concerned and aware of the fatigue level in personnel assigned to the burn.
  - Some Fire Use Module members hiked in equipment the morning of May 4

- Hiking up Cerro Grande Peak to begin operations
- Blackline operations down the east flank
- Blackline operations down the west flank
- The Burn Boss has the ten-person handcrew plus six NPS employees hike down to the vehicles to rest.
- When the crews arrive at their vehicles, the ten-person handcrew notifies the Burn Boss that they are not prepared to spend the night at the vehicles, they are released from the burn and return to their home unit.
- The burn plan calls for the Type II crew to be the holding forces during the night operations. After the crew is released, the remaining NPS personnel become holding resources for the remainder of the night.
- At approximately 0230 the burn boss leaves the burn and drives to Monument Headquarters to order contingency resources.

### **Handout Tactical Decision Game #3**

## Stand #4 – The Slop Over

### Maps

- 3D Relief Map with ignition sequence

### Access

- NAD 27 GPS Coordinates: 35.51.440 x 106.24.269
- Continue traveling southeast following ridgeline to end of ridge.

### Terrain Orientation

- Cerro Grande Peak to the northwest
- Proximity of Los Alamos and Los Alamos National Laboratory

### Events to Describe

- Communication of resources needs
- Transfer of in command
- The slop over

### Discussion Guide

#### Conduct Tactical Decision Game #3

- Between 0300 and 0400 phone calls are made between the Burn Boss and Santa Fe Zone Dispatch regarding ordering contingency resources. Facts surrounding these phone conversations are in dispute, however contingency resources did not arrive until much later that morning. The Burn Boss begins calling people outside the dispatch system, and two NPS engine crew members are contacted.
- At approximately 0600 the Burn Boss is informed the interior backing fire has burned below the black lining operations.
- At approximately 0700 holding personnel on the east flank inform the Holding Boss they are concerned the interior backing fire will hook them. They begin black lining operations to stay below the east flank backing fire.
- At 0730 contingency resources are confirmed (1 Type 3 helicopter, 1 IHC) with the Santa Fe Zone Dispatch Center.
- At approximately 1000 the Burn Boss is exhausted and formally transfers command. Shortly thereafter, the east flank holding crew detects a slop over a short distance uphill from their location.
  - Approximately 1 acre...unable to catch it.
  - Request helicopter with bucket.
- At approximately 1030 the Type 3 helicopter arrives and drops off 2 crew members. The helicopter is then assigned to begin bucket work.

- At approximately 1100 the IHC arrives, approximately half the crew are assigned to the east flank slop over. A second IHC is ordered.
- Forecasted weather is warm and dry. Max temperatures 68-72, minimum relative humidity 14-18 percent. 20 foot winds west/southwest 15-18 mph in afternoon.

#### **Handout Tactical Decision Game #4**

## Stand #5 – The Meadow

### Maps

- Topo Map with stand locations

### Access

- NAD 27 GPS Coordinates: 35.51.043 x 106.25.025
- From the east ridge, walk southwesterly into Frijoles Canyon and continue southwesterly to Stand #5 in the meadow.

### Terrain Orientation

- Cerro Grande Peak
- Prescribed Fire Perimeter

### Events to Describe

- Conversion to Cerro Grande Fire
- Wrap-up and summary

### Discussion Guide

#### Conduct TDGS #4

- At approximately 1255 an air tanker is requested to assist in containing the slop over.
- At 1300 the Burn Boss decides to convert the prescribed fire to a wildfire. Additional resources are ordered. All efforts were focused on suppressing the fire.
- Increased fire behavior problems during the afternoon.
- At 2115 the Wildland Fire Situation Analysis was approved.

#### Handout Tactical Decision Game #5 – to be discussed during the “Integration Phase”