

# Monument Fire Entrapment Investigation Report

Conducted July 23, 2001

## Wildland Firefighter Entrapment

Occurred May 15, 2000

Pecos National Historical Park  
P.O. Box 418  
Pecos, NM 87552

# Monument Fire Entrapment Investigation Team

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Stan Palmer, Safety

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## **Introduction**

Pecos National Historical Park is located 25 miles south of Santa Fe, NM, two miles south of the Village of Pecos. This 6,600-acre park is comprised of 3 geographically separated units and has a work force of 20-25 personnel. The Park receives approximately 40,000 visitors per year. Wildland fire occurrence is approximately three fires in the past 10 years, and the Monument Fire was the first extended attack fire.

Extreme fire danger conditions existed in the area at the time of the Monument fire and national fire suppression resources were committed to large fires in the area. The Cerro Grande Fire, started as a National Park Service prescribed fire at near-by Bandelier National Monument, was uncontrolled and had burned homes leaving over 400 families homeless. Park staff had been gathering food and clothing for these fire victims and there was concern by the Pecos superintendent regarding the dangers of a fire start and danger to the Village of Pecos and other homes in the area.

The Superintendent called an all-employee meeting on May 12, 2000 to address procedures for a fire start in the park and the readiness of park staff to respond. The superintendent recalled that he emphasized staff were only to attack "small fires" and told investigation team members he gave examples of a smoldering cigarette or sparks from a grinder that could be put out. All employees the investigation team interviewed interpreted the directions differently than the superintendent's stated intent. The employees were given a subsequent orientation to the park "slip-on" fire engine, and an orientation to fire tools and instructed to fill bladder bags with water. The fire investigation team concluded the park staff was preparing, to the best of their ability, to initial attack fire starts.

At the all-employee meeting and afterwards, a small number of employees questioned the inadequate training, equipment and these actions conflicting with policy. The investigation team was told that the superintendent advised them he would take responsibility for the directions.

On May 15, 2000, the Park experienced a fire start along I-25, near the park boundary. The fire was named the Monument Fire. It lasted approximately 4-5 days and involved approximately 180 acres. No buildings or structures were lost or damaged and no accidents or injuries were reported. The fire was declared contained on the afternoon of May 16.

In June of 2001, the regional office performed an Oversight Review at Pecos National Historical Park. The possibility that there was an unreported entrapment of a wildland firefighter on the Monument fire was discovered. The possible entrapment was alleged to have occurred during initial attack suppression operations on the Monument Fire on May 15, 2000. The Intermountain Regional Director instructed the Branch of Fire and Aviation to conduct a preliminary review of the alleged entrapment to determine if an investigation was warranted. The Regional Director mobilized a separate preliminary review team for this assignment.

The preliminary review was conducted July 8-10, 2001. The objective of the preliminary review was to determine if an entrapment had occurred. The preliminary review team interviewed personnel involved in initial attack operations at the Monument Fire, visited the fire site with

them, and reviewed documentation related to the incident. The team's preliminary review concluded that a National Park Service fire fighter was entrapped on the Monument fire on May 15.

Following this determination an Entrapment Investigation Team was ordered. The Delegation of Authority was issued on July 19, 2001. The team was tasked to perform an entrapment investigation according to the guidelines set forth by the National Wildfire Coordinating Group and the National Park Service in Reference Manual RM-18. The delegation stated that "This report will include, but not be restricted to, the areas identified in the RM-18 manual, the Entrapment Investigation Element Matrix, causal factors, findings and recommendations for corrective actions." The investigation was initiated on July 23, 2001.

The investigation was conducted by interviewing involved personnel, visiting, videotaping, and photographing the site, reviewing cooperative agreements, and examining the initial attack equipment and fire cache. The preliminary entrapment review team report was reviewed extensively and is included in this report.

### **Incident Overview**

On May 15, 2000, at approximately 1100, a fire was sighted south of Pecos Trading Post. The fire was adjacent to I-25 and possibly within park boundaries. (The Investigation Team learned that an arson investigation team did visit the incident and determined the fire was probably started by a hot tire rim on a vehicle.) Eleven Pecos National Historic Park personnel responded to the fire. At approximately 1115 they began to arrive at the fire and proceeded to take suppression action. These personnel arrived at various parts of the fire without an established incident command system. Several personnel arrived in an NPS light engine and other vehicles. They left the vehicles and proceeded to construct hand line on the north end of the fire from an adequate anchor point near I-25. Other personnel took vehicles north and south on La Joya Road to provide traffic control. An NPS fire fighter and another employee arrived by vehicle and proceeded to take frontal suppression action on La Joya Road. The NPS fire fighter was entrapped when the vehicle he arrived in departed, leaving him at the head of the fire with no clearly identified or understood escape routes or safety zones.

At approximately 1230, a USFS fire fighter arrived on USFS Engine 501. He initially drove north on La Joya road from the 63 junction past the area where the fire was crossing La Joya Road. During his interview he stated he did not see the NPS fire fighter on the road. He turned around when he saw that an adequate anchor existed at the north end of the fire west of La Joya Road and, when driving back along the same road, he saw the NPS fire fighter off the side of the road, picked him up, and began to take flanking action to the east from La Joya Road. The NPS fire fighter made no mention of an entrapment. The USFS fire fighter continued to take aggressive and effective suppression on the left flank of the fire. He coordinated retardant drops and directed other engines in an effective initial attack operation. At approximately 1500 determination was made to establish a local Type III fire organization. The Type III team took control of the Monument Fire at 0600 on May 16. The fire was declared contained at 1900 that day.

## **Incident Chronology**

### Chronology of events immediately surrounding entrapment.

May 15, 2000

11:05 am

Smoke detected.

11:15 am

Park personnel locate fire. A variety of unorganized suppression action is taken. Two employees drive north on La Joya Road to several vehicles parked along the road. They leave their vehicle and walk west towards I-25 along the north flank of the fire. They tie in with volunteer fire fighters and proceed to build scratch line from I-25 east toward La Joya along the north flank. They are working off a secure anchor point. One employee becomes uneasy about being on the fireline. It is suggested that person go help with traffic control to the north on La Joya Road.

Two employees come into the fire area from the junction of Hwy 63 and La Joya. They do not see fire or smoke and stop to survey the situation. They see a number of vehicles stopped along the road and drive west from La Joya looking for the fire. When P1 returns to the pickup P2 is donning his PPE and also has a bladder bag. His PPE consists of a fire resistant shirt, gloves, and hard hat. He takes a bladder bag and proceeds to squirt hot spots and torching juniper trees. P1 expresses an uneasy feeling about the situation to P2, but P2 feels that he can do some good. P2 stays in the area and P1 takes the pickup south to the La Joya/Hwy 63 junction.

11:20 am

A call is made to the USFS with a smoke report.

1130-1140 am

An employee drives to the junction of La Joya and Hwy 63 to direct traffic. She meets a state FWS individual who assists her in traffic control and provides a cell phone.

1200 pm

I-25 is closed by State Police from Rowe to Las Vegas for approximately one hour.

An employee, concerned about the visitor center, calls to close the visitor center and to direct visitors to exit the park in the opposite direction of the fire.

12:09 pm

The Pecos/Las Vegas RD Fire Management Officer leaves Santa Fe airport on air patrol.

12:25-12:45 pm

The FMO arrives over the fire area. He sees three USFS engines on scene.

A USFS fire fighter in E-501 arrives at the junction of Hwy63 and La Joya Road. He drives to the south end of the fire, pausing for a moment while the flames lie over the road. Less than one minute later the flames lift and he drives north on the road adjacent to the fire. When he arrives at the north end, he sees a cluster of vehicles and turns around. He feels the personnel are in no danger and that they are working off a good anchor point. He sees a fire fighter back up La Joya Road, from where he has just come, squirting water on a torching Juniper tree. It is the NPS fire fighter. The USFS fire fighter picks up the NPS fire fighter and enlists him to help him flank the fire from La Joya to Hwy 63, as the fire has jumped La Joya Road.

The FMO observes the fire spotting across the La Joya Rd.

1330 pm

Fire crosses Highway 63

15:00-15:30 pm

Highway 63 opens.

## **Fire Behavior**

### **Fire Behavior Summary**

#### ***Location***

The Monument Fire was located in the Pecos River drainage, one-mile southwest of the confluence of Glorieta Cr. and Pecos River. The origin was east of and immediately adjacent to Interstate 25 in light grass.

#### ***Topography***

The Pecos River is the dominant drainage, and runs from south-southeast to north-northwest. Terrain in the vicinity of the entrapment is flat to gently sloping, with elevation ranging from 6750 - 6900 ft. Elevation at the entrapment site is approximately 6880 ft. Slope does not exceed 20% on any portion of the fire, and is 10% or less in most places, including the entrapment site. A gently sloping, shallow drainage runs northwest-southeast across La Joya Road, becoming a steep draw on the southeast portion of the fire. This feature appeared to have some influence on local winds and fire spread across La Joya Road, as well as spread of a finger on the southeast perimeter.

#### ***Fuels***

Fuel types in the fire area are well-delineated by geographic location. Between Interstate 25 and immediately east of La Joya Road, including the entrapment site, the predominant cover type is mature pinyon-juniper with scattered ponderosa pines. Stand density ranges from very open with grass and litter understory to nearly closed stands with compacted needle litter and moderate accumulation of understory brush. The average cover height of the pinyon-juniper stands is approximately 20-30 ft. Grasses in the area are largely perennial bunch grasses – primarily Buffalo Grass, with Western Wheatgrass, Little Bluestem, and Tall Fescue interspersed.

100 feet east of La Joya Road, the pinyon-juniper stands abruptly give way to a meadow of continuous short, perennial bunch grasses with small, scattered juniper shrubs. East of Highway 63, grasses become discontinuous, and transition into a broken stand of 6-8 ft. pinyon and juniper shrubs with sparse surface fuels.

Surface fire fuel models (FM) represented in the area are FM 1 (short grass), FM 2 (short grass/litter understory), and FM 9 (pine litter). For crown fire spread in pinyon-juniper, FM 6 (dormant brush) gives a reasonable estimate of spread rate, and FM 4 (chaparral) provides a good approximation of flame length.

Grasses were reported to be still green at the time of the fire, though rapidly curing to nearly cured. Live woody fuels were extremely dry, and well below the level (90%) considered to be critical for extreme fire behavior. Live woody fuel moistures measured in the area on May 16 were 76% for juniper, 72% for pinyon pine, and 75-84% for ponderosa pine. Measured 1000-hr. fuel moisture for ponderosa pine was 5.6%. Fine fuel moisture during the first 3-4 hours of the fire ranged from 2-4%, with an estimated probability of ignition (PI) of 80-100%.

### ***Weather and Climatology***

The region had been under an extended drought, with a strong La Nina influence in place. Conditions had been unseasonably warm and dry the winter and spring prior to the fire, and live fuels were extremely drought-stressed. Weather observations obtained from the nearby Pecos RAWS station (#291202) indicated that calculated energy release component (ERC) and 1000-hr. fuel moisture values during May 2000 exceeded the 97<sup>th</sup> percentile level.

Local park personnel noted that the typical prevailing winds during May are generally out of the northwest, and can become quite strong locally. Observed wind direction for the first three hours of the fire was consistent with this, from northwest to west. Initially, winds were northwest at 3-5 mph, pushing the fire to the south/southeast in light fuels. Winds changed to westerly by 1200h and increasing in speed. The Fire Behavior Analyst working for the incoming Type 3 organization provided on-site weather observations for May 15 in the May 16 Incident Action Plan. These weather observations are shown below:

<b><i>Time</i></b>	<b><i>Temp. (F)</i></b>	<b><i>RH (%)</i></b>	<b><i>Wind Speed (mph)</i></b>	<b><i>Wind Direction</i></b>	<b><i>1-hr. Fuel Moisture (%)</i></b>	<b><i>PI (%)</i></b>
1240	83	13	8-13	SW to NW	3	90
1300	84	9	8-18	SW to NW	2	100
1330	88	10	4-10	West	2	100
1340	88	10	16-27	West	2	100
1400	85	13	4-12	West	3	90
1423	80	17	5-8	West	4	70
1512	85	11	4-6	West	3	90
1552	80	17	3-5	West	4	80
1735	79	19	7-9	West	4	70



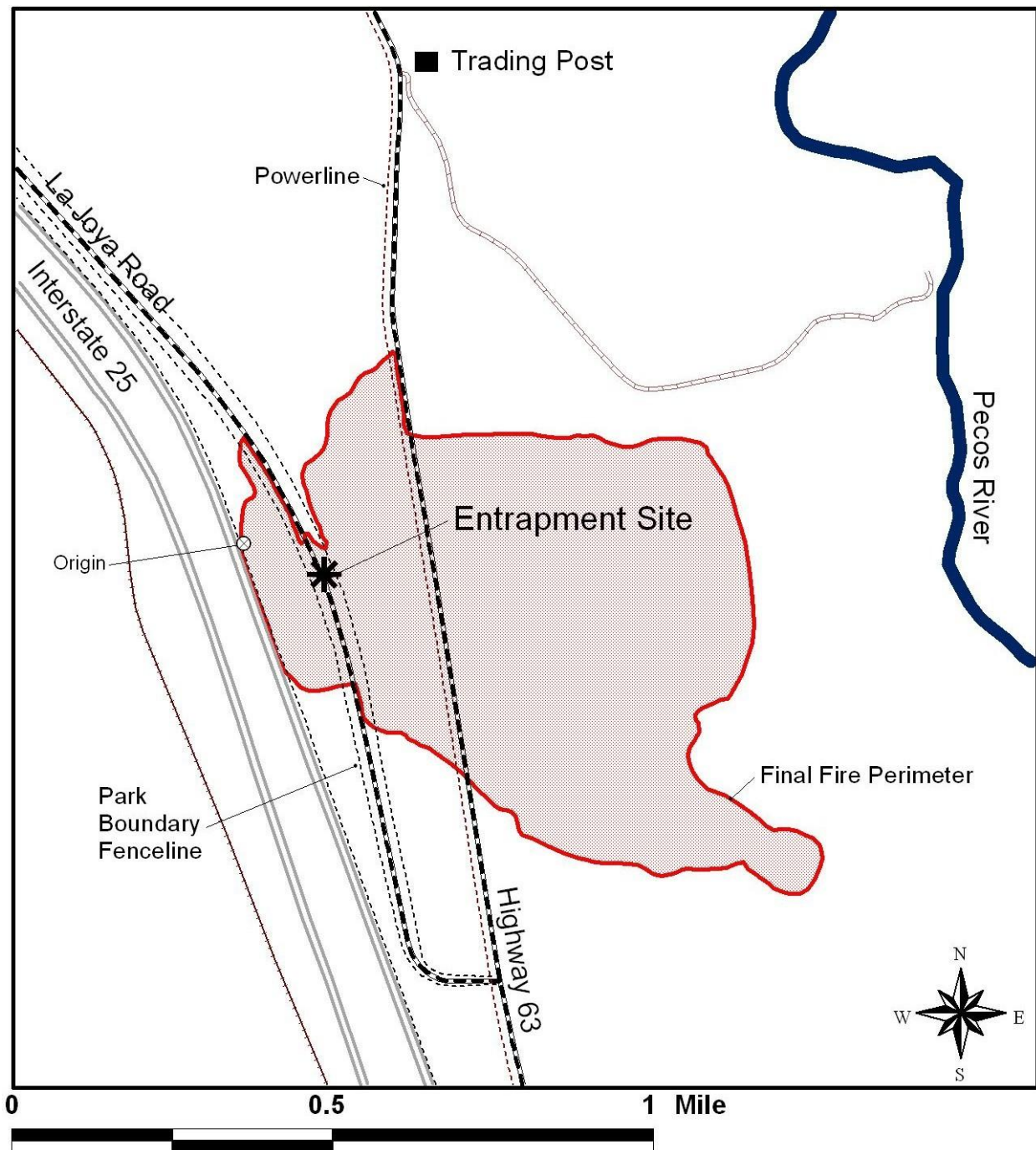
Additionally, the Haines Index for May 15 was 6, indicating dry, unstable atmospheric conditions and a high potential for plume-dominated fire growth.

### ***Significant Fire Behavior***

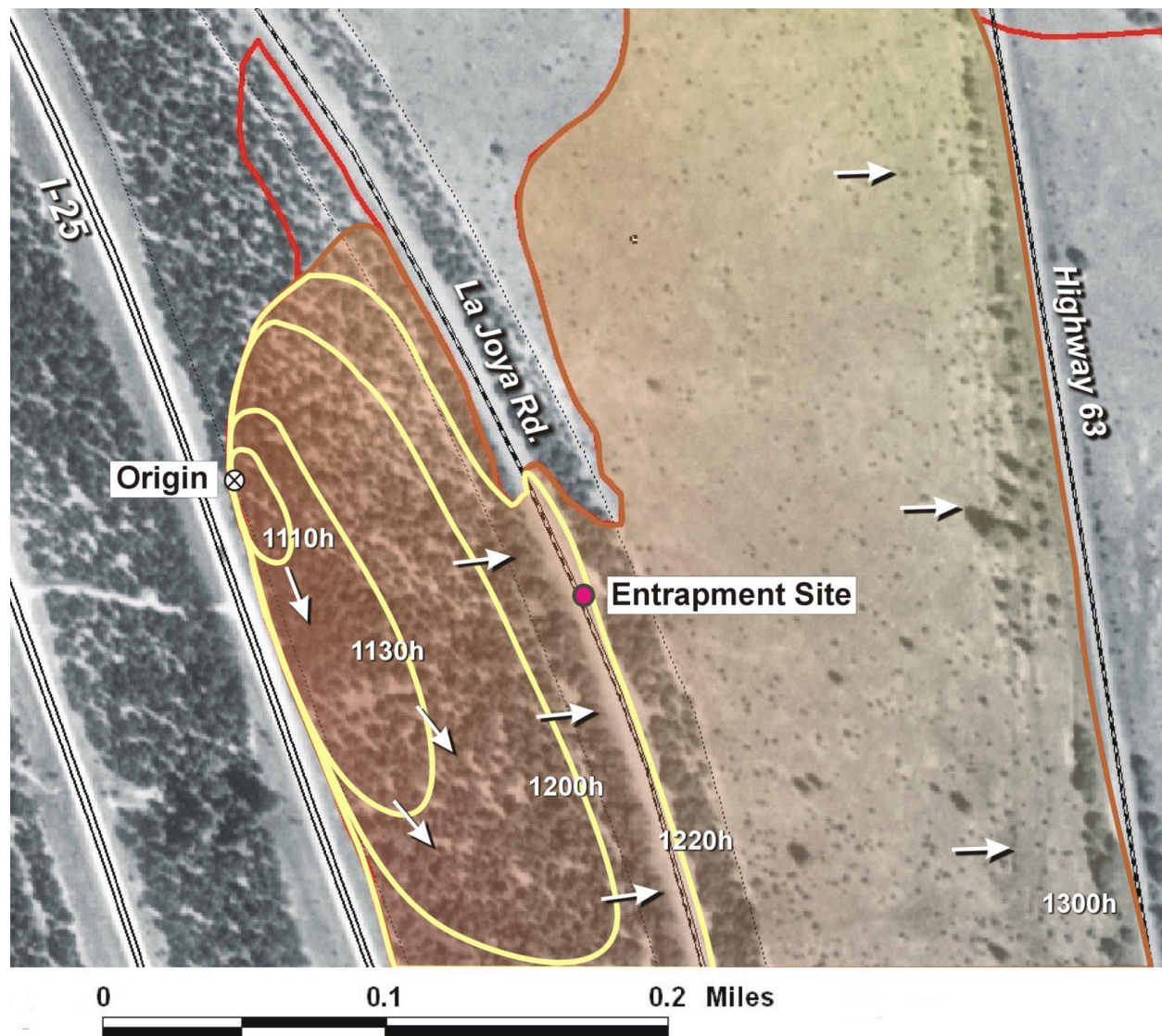
Personnel on the fire reported seeing fire behavior that included low- to moderate-intensity surface fire in grass and scattered understory litter, to extreme fire behavior in more continuous pinyon-juniper. Extreme fire behavior observed in pinyon-juniper included frequent, aggressive torching and short-range spotting, and intermittent sustained crown fire runs in more continuous canopies. There was one report of fire vortices across La Joya Road approximately 80-100 yards south of the entrapment site. Spotting across La Joya Road was frequent, with aggressive torching and short crown runs toward La Joya Road from the west, and spot fires ignited readily. Maximum reported spotting distance was less than 0.1 mile at any point on the fire.

### ***Fire Behavior by Time and Location***

- 1110 The fire is located. Observed flame lengths are 2 feet or less in light grass adjacent to I-25 and in grass understory of an open pinyon-juniper stand east of the interstate. Winds are light and out of the north-northwest. Fire is spreading to the south from the point of origin at a slow to moderate rate, described as “creeping.”
- 1130 Crews note the fire is “crackling real good” and increasing in intensity. The fire jumps the park boundary fence west of La Joya Road. Winds are shifting to north-northwest. This results in a fire front approximately 150 yards wide, and strong winds are pushing the fire front toward La Joya Road. Torching is frequent, and the fire starts to make short crown runs through groups of trees.
- 1200 Winds shift to westerly, pushing the fire front directly toward La Joya Road
- 1220 Estimated time of entrapment. Frequent torching continues, with short sustained crown runs west of the fence line toward La Joya Road. There is heavy smoke across the road, intense radiant heat, and one report of fire vortices across La Joya Road south of the entrapment site. Torching is described as “explosive” with flame lengths of 40-60 ft. Fire spread across La Joya Road, largely following the dry creek drainage running east to west.
- 1230 Fire has crossed La Joya Road and is moving into the large meadow to the east. Flame lengths are 2-4 ft. in grass fuels, with spread rates approximately 20-30 feet per minute (chains per hour).
- 1300 Fire reaches Highway 63. Ponderosa pines adjacent to Highway 63 are torching, with frequent spotting.
- 1330 Fire is across Highway 63 and moving to the east-southeast. The main front is burning with low intensity in light fuels up a gentle slope east of Highway 63. A finger is also moving southeast along a deep draw lined with ponderosa pines (approximately 60 feet tall). The bottom of this draw is filled with old slash, contributing to intense burning and torching of the ponderosa pines. The fire is spotting to the southeast.



**Figure 1.** Fire location and general vicinity.



**Figure 2.** Approximate perimeter progression for the times referenced in the chronology. Arrows indicate the direction of fire spread for those times.





**Figure 3.** Fire bumping La Joya Road, viewed from north of the entrapment site.



**Figure 4.** Entrapment site (arrow) on the east side of La Joya Road.

## ***Fire Behavior Summary and Conclusions***

Drought, warm and dry conditions for the months prior to the fire, and a persistent La Nina influence created conditions predisposing the area to extreme fire behavior. Critically low live woody and foliar fuel moisture levels left pinon-juniper stands particularly prone to explosive torching, and brief, sustained crown fire runs with moderate to strong winds. Additionally, the shift in wind direction from northwest to west during the first hour of the fire resulted in a broad fire front in heavy fuels that subsequently moved toward La Joya Road and the entrapment site. This front was approximately 150 yards wide when it hit La Joya Road with intense heat from 40-60 foot flame lengths, heavy smoke across the road, and frequent short-range spotting that produced numerous spot fires.

Several aspects of fire behavior and weather were significant factors in the entrapment:

- The fire started in late morning, when the atmosphere was becoming unstable, with a forecast Haines Index of 6 for that day. Wind speed was likely to increase with surface heating and dissipation of any inversion present.
- Extended drought and unseasonably dry conditions pre-disposed the area to aggressive burning conditions and extreme fire behavior. This was evidenced by the Cerro Grande Fire that had started one-week prior the Monument Fire, 40 miles to the northwest.
- Key trigger points presented themselves prior to the entrapment:
  - The wind changed noticeably in direction and increased in speed.
  - With this change in local winds, the surface fire intensity increased and single-tree torching commenced.
  - Spotting increased in frequency as torching became frequent.
  - Short crown fire runs begin, and torching becomes “explosive.”

## **Fire orders violated and watch out situations compromised**

Four standard fire orders were violated and eight watch out situations were compromised. These are listed below. It is important to note that the employees involved were not trained or qualified in basic fire suppression. They did not have the necessary basic training to effectively apply standard fire orders, watch out situations, and LCES. Ultimately all 10 standard orders and all 18 situations except 2,9,13, and 18 were violated.

### *Fire orders violated*

#### Ensure instructions are given and understood.

No strategic or tactical instructions were given to the NPS firefighter for initial attack operations, therefore none were understood.

#### Remain in communication with crewmembers, your supervisor, and adjoining resources.

No communication existed between the NPS fire fighter and any other fire fighter from the time he was dropped off on La Joya road until the time the USFS fire fighter picked him up on La Joya Road.

Determine safety zones and escape routes.

No safety zones or escape routes were determined, identified, or communicated to the NPS fire fighter.

Retain control at all times.

The NPS fire fighter's location and status was unknown by his supervisors for about two hours.

*Watch out situations compromised*

Fire not scouted and sized up.

The fire was not scouted and sized up by the NPS fire fighter and his partner.

Safety zones and escape routes not identified.

Safety zones and escape routes were not identified.

Uninformed on strategy, tactics, and hazards.

The NPS fire fighter was uninformed on strategy, tactics, and hazards.

Instructions and assignments not clear.

The NPS fire fighter had no clear instructions or assignment.

No communication link with crew members/supervisor.

The NPS fire fighter had no communication link with other crewmembers or his supervisor.

Attempting frontal assault on fire.

The NPS fire fighter was attempting a frontal assault on the fire.

Unburned fuel between you and fire.

There was unburned fuel between the NPS fire fighter and the fire.

Terrain and fuels make escape to safety zones difficult.

Terrain was no factor, but fuel models involved (1,2,9) required vehicle based escape route for other than direct attack. The NPS fire fighter was on foot and not performing direct attack.

### **Park Initial Attack Personnel Training and Qualifications**

The eleven park personnel who initially responded to the Monument Fire came from the Division of Interpretation and Visitor Services, the Division of Cultural Resource Management, and the Division of Maintenance. They had limited or no wildland fire training and qualifications. None had current “red card” qualifications. None had received fire refresher training or completed the Work Capacity Test.

The NPS fire fighter had received 16 hours of basic wildland fire suppression training in 1996. In 1999 he completed the annual fire fighter refresher course.

Only the law enforcement personnel have fire fighting responsibilities identified in their position descriptions. Only one (of three) has maintained qualifications consistently.

The personnel who used the light engine during initial attack had not received any formal training on operation of this unit.

### **Fire Management cluster concept and implementation, Policies, and Agreements**

#### **National Park Service Intermountain Region Cluster Concept**

At the time of the Monument Fire, the Intermountain Region had geographically divided the region into clusters of parks, which were served by Area Fire Management Officers. The Southwest cluster had five Fire Management Officers (FMO) funded through FirePro. Each FMO served as an Area FMO for a group of parks. Pecos National Historical Park was included in the Pueblo Park’s Group, which was served by the FMO from Bandelier National Monument.

Parks within the Pueblo Park Group include:

- Alibates Flint Quarries National Monument
- Bandelier National Monument
- Capulin Volcano National Monument
- El Malpais National Monument
- El Morro National Monument
- Fort Union National Monument
- Lake Meredith National Recreation Area
- Pecos National Historical Park
- Petroglyph National Monument
- Salinas Pueblo Missions National Monument

As of April 3, 2001, two additional Area FMO’s have since been added, and the cluster arrangement has been reconfigured as follows:

- Lake Meredith National Recreation Area FMO to serve:
- Alibates Flint Quarries National Monument
- Capulin Volcano National Monument
- Chickasaw National Recreation Area
- Washita Battlefield National Historic Site

El Malpais National Monument Area FMO to serve:

- El Malpais National Monument
- Petroglyph National Monument
- Salinas Pueblo Missions National Monument

Bandelier National Monument Area FMO to serve:

- Pecos National Historical Park
- Fort Union National Monument
- Santa Fe System Support Office

An administrative review of correspondence between BAND and PECO was conducted for the period between January 1999 and May 2000. This review noted the following:

- The two park units corresponded three to four times per month via cc-mail.
- Most correspondence was between the BAND FMO and the lead protection employee at PECO. Very limited correspondence involved the line officers.
- Correspondence in July 1999 indicated the PECO Superintendent was “terrified of a wild fire getting into the Village”.
- It was apparent that the staff at PECO was very anxious to get the Fire Management Plan completed. It appears that that effort was approximately 50% complete at the time of the Monument Fire. It is still incomplete.
- An inter-park agreement between BAND and PECO did not appear to be in place at the time of the Monument fire. A draft document has been exchanged between the two units during the summer of 2001.
- Site visits from BAND staff to PECO did not appear to occur more than once or twice a year.
- In May 1999 PECO received a pickup truck which they intended to equip with a slip-on unit and mark the vehicle in accordance NPS stripping and lettering standards, thus clearly identifying the unit as a fire truck.
- The BAND FMO acknowledged the hard work put forth in acquiring the equipment but reminded PECO that they did not have any employees qualified as a Single Resource Boss to adequately supervise the engine during fire operations and that utilizing the engine without qualified personnel would be operating outside established policy and could place personnel in hazardous situations. The BAND FMO offered assistance in developing training plans for PECO personnel to become qualified.
- The BAND FMO maintained an assistance log to document time devoted to providing support to area park units. A review of that log indicated that less than 8 hours per month was provided to PECO.



Most all other correspondence was relating to budget requests, training, qualifications, and fire weather information. Very limited safety related information was exchanged.

At the time of the Monument Fire there was a Joint Powers Agreement in place. The Regional Director, Intermountain Region signed it on May 19, 1997. The agreement is valid for 5 years.

The Joint Powers Agreement is the document for which the Initial Attack Operation Plan based on.

The Initial Attack Operating plan Santa Fe Zone was in place at the time of the Monument Fire. It was signed by the Superintendent of Pecos National Historical Park May 4, 1997. This plan states in Section III "Responsibility", that the Pecos National Historical Park will have initial attack responsibility.

#### Recommendations:

- Complete the Fire Management Plan.

The NPS has stated in policy this will be done and committed money to accomplish this within 2 years.

- FMO Support and Area Program Oversight:

The NPS has reduced the span of control for FMO support and the team believes this will result in an improved fire program. A written agreement between BAND and PECO should be developed that defines the role and responsibility of the area FMO. Examples of items agreed should include representation at area fire meetings to negotiate fire business, protocols for budget actions, etc. Examples of this agreement exist in other NPS areas and they should become standard operating procedures for area FMO's.

- Existing Fire Agreements:

The existing agreement requires the NPS to provide initial attack on fire starts at PECO. The terms of this agreement need to be changed or the park must prepare for this role with adequate training and equipment.

- Engines at small parks:

An engine at a park implies to cooperating agencies, visitors and staff that it exists to fight fire. In times of emergency need it is not reasonable to assume it will not be used- whether qualified people are available, or not. If an engine exists it must meet the national standards; this includes people qualified to operate it. There should be no distinction between engines funded by a park or through the FirePro process in the matter of meeting these standards.

- Fire Business Information:

The PECO superintendent states he does not receive fire business information directly. All superintendents should be added to the routing of this information. They are accountable for fire business and operations in their park areas and must have this information to ensure compliance with policy and service intent.

- Pecos Fire Cache Equipment:

The Pecos Fire Cache, located at the Trading Post, was not equipped with adequate fire fighting supplies and personal protective equipment. Inadequate amounts of properly sized fire resistant pants and shirts were available for initial attack of the Monument Fire. Only one personal fire suppression bag was available.

- Pecos Wildland Fire Engine:

The NPS engine that responded to the Monument Fire was a recently purchased 200-gallon Western-Pacific slip-on recently (May 5, 2000) placed on the back of a 1985 Chevrolet four wheel drive pick-up. It appeared to be well maintained. In June 2000 it was stationed at Pecos and Las Vegas Ranger District Office for the duration of the summer at the request of the local Forest Service. This request was due to a break down of one of their primary engines. Forest Service personnel were assigned to operate the engine. No additional equipment funding was requested for 2001.

- Radio Communications:

The PECO engine has no ability to communicate with cooperating agencies. If this engine is to remain in service this must be addressed as a significant safety issue.

The park staff with fire responsibility do not have a common fire or emergency operations channel for communication with cooperators. This is also a significant safety issue that needs to be negotiated locally.

The park repeater has no back-up power supply. During the fire incident power was shut off to the area and ability to communicate beyond line-of-sight was lost. A back-up power supply system should be developed.

- Fire Management and Leadership in the Park:

When this incident occurred key leadership positions were vacant, including the Chief Ranger position with the delegated responsibility for fire and other emergency operations response. Severe fire danger indices existed without action by the superintendent to ensure adequate leadership and preparation was in place.

Interviews with park staff showed an almost complete lack of leadership as none of the staff responding to this fire incident knew who was in charge, and no one was qualified to lead initial fire attack. Most of them knew they should not be responding without training and proper equipment, but believed the superintendent had told them they would respond anyway. All

actions, except traffic and visitor control, were in violation of existing policy. This included the post-incident business of not reviewing the incident until almost three months later, not ensuring clarification of employee fire response duty within the park until ordered by regional office over a year later and completion of required fire reports. The line officer (Superintendent) is accountable for this.

## **Findings and Recommendations**

### **Entrapment Findings**

- May 15, 2000, at approximately 12:20 a.m., one fire fighter was entrapped.
- Initial attack direction/instruction at Pecos provided by the Superintendent verbally at an all employee meeting on May 12, 2000, led to at least 11 park employees engaging in suppression without required personal protective equipment, training, experience and qualification. This direction violated NPS policies and exposed these employees to unnecessary risk and exposure.
- The verbal instructions given to employees at the all employee meeting on May 12, 2000 were in violation of NPS policy. (DO/RM-18.)
- Personal protective equipment and cache supplies were inadequate. None of the employees were wearing an entire complement including fire shirt and trousers, hard hats, gloves, fire shelters, boots, and goggles. (DO-18, Section 5.)
- Unqualified personnel were engaging in fire suppression operations. None of the park employees involved in suppressing the Monument Fire maintained current fire suppression qualifications or work capacity testing. (DO-18, Section 5.)
- No operational or safety briefing was conducted prior to initial attack of the Monument Fire. (RM-18, Chapter 3, Field Operations.)
- No initial attack organization was established during the initial attack phases. (RM-18, Chapter 3, Field Operations.)
- Many of the fire orders were violated and 18 “watch-out” situations were not observed.
- The entrapment was not reported. (RM-18, Chapter 3, Exhibit 3.)
- A DI-1202 Individual Fire Report was not completed for the Monument Fire. (RM-18, Chapter 9.)
- No ability to communicate with cooperating agencies on Monument Fire, and no one channel or frequency capabilities.

- When commercial power was discontinued, power to the repeater was cut off, losing one channel and leaving only one park service channel available.
- The NPS slip-on engine was not properly equipped or staffed to NWCG and NPS standards.
- The existing Standard Operating Procedures (SOP) for wildland fire were inadequate and outdated.
- The initial review of agreements and operating plans indicate that the initial attack responsibilities remain with the park.
- Violations of policy when a timely review of an extended fire did not occur.
- The U.S.F.S. initial attack response to the Monument fire was excellent and the Type III organization established was timely and appropriate.

Additional findings for consideration:

- Employees should be informed about the availability and use of SafeNet. This is a new tool for firefighters to report unsafe work situations. If employees had received the fire training they would have been able to resolve these safety issues.
- Employees expressed concern for retaliation because of their actions on the Monument Fire and their cooperation with the investigation team.
- The July 15, 2001 Memorandum, directive on response to wildland fires is still in violation of policy. It needs additional review by the regional office.

## APPENDICES

1. Wildland Fire Fatality and Entrapment Initial Report
2. Entrapment Investigation Element Matrix
3. Team Membership:
  - Steve Holder, Team Leader
  - Alan Cox, Liaison (Preliminary Review Team Leader)
  - Kelly Close, Fire Behavior
  - Stan Palmer, Safety
  - Roberta D'Amico, Information
  - Sean Cross, Operations
  - Dan Morford, Strike Team Leader
  - Tracy Schiess, Logistics
  - Stephanie Lounsbury, Admin. Support