

March 15, 1997

Subject: Rock Springs District
Lizzie Springs Prescribed Fire Escape Review

Date of Review: March 4 and 5, 1997

Review Team:

Phil Range, Prescribed Fire Specialist, Office of Fire and Aviation, NIFC
Al Carriere, Prescribed Fire Specialist, Office of Fire and Aviation, NIFC
Steve Eckert, State Fire Management Officer, Wyoming State Office

Participants:

Fire Control Officer, Rock Springs District, Burn Boss (T)
District Fire Ecologist and Burn Boss, Craig District, Colorado
Range Conservationist, Green River RA, Resource Advisor
Fire Ecologist, Rock Springs District, Technical Advisor
Chief, Support Services, Rock Springs District

In January, the Wyoming State Office notified the Office of Fire and Aviation that a prescribed fire had escaped and per the guidelines in the Bureau 9214 Manual and the *Standards for Fire Operations* was requesting an evaluation team to review the Lizzie Springs Prescribed Fire. Based on preliminary information, it was decided that a three person evaluation team would be adequate. The purpose of the review was to:

1. Prevent future escapes from occurring and to establish accountability
2. Determine if policy, guidance, and procedures relating to operation and safety are adequate.
3. Determine level of awareness and attitudes toward procedures and guidance of the personnel involved before escapes occur.
4. Determine extent of the prescribed fire training and experience levels of personnel involved.

Lizzie Springs Prescribed Fire – Background

The Lizzie Springs Burn Plan was approved by the District Manager in September 1995, with the intent that it would be executed in September or October of that year. Due to heavier than normal precipitation during the summer months and cooler than normal conditions in the fall, the prescribed fire was not completed. In 1996, the project was reactivated and good coordination occurred between the resource staff, Resource Area, and support services. The Burn Boss (Jim Anderson) was brought in from Craig, Colorado, and the District FCO (Tony Tezak) served as a Burn Boss Trainee. About mid-September an on-site visit was conducted to identify issues and concerns. It was identified that treating Lizzie Springs was a high priority and the funding for the project was primarily contributed by the Rocky Mountain Elk Foundation. The headwaters area of Lizzie Creek was identified as a higher risk area due to heavier fuels and lack of natural

barriers. It was understood that an escape to the east of the project area could not be accepted but areas to the north and east were not as critical. The next day a meeting was held in the District Office where those involved in the project had the opportunity to cover their issues and concerns again. It was felt that agreement on project priority and burn operations had been obtained and everyone felt good about the project. Several inches of snow fell over the next two weeks.

On October 2 the first attempt to ignite the fire occurred in the late afternoon, but due to higher relative humidity and traces of precipitation, the effort was abandoned. On October 3, better conditions prevailed allowing the north and east parameter to be burned first providing a control line so that the remainder of the unit could be completed. The critical Lizzie Creek drainage was then burned to take advantage of the higher fuel moisture. Burning continued and the unit was completed in October 4 and all people involved felt good about their accomplishments. Patrolling the fire by two District engine crews continued for the next five days. Only a few smokes persisted in the conifer/aspens stand at the head of Lizzie Creek. On the seventh day after the burn the Resource Advisor (Rick Amidon) was at the site, where the fire eventually escaped, and could see two smokes well within the burn perimeter. On the eighth day (Oct. 12) after the burn, the fire escaped early in the evening when dry conditions and high winds prevailed. On Oct. 13 a Type 2 Incident Management Team was ordered by the District FCO (Burn Boss trainee) to take over the fire that ultimately burned about 350 acres in heavy subalpine timber.

After the Lizzie Springs burn was completed, two other prescribed fire projects were completed successfully.

Several days after the Lizzie Springs burn had been ignited, two other prescribed fires in the state escaped; one was with the State of Wyoming and the other with the US Forest Service. The exact causes were not known, but statewide conditions were hotter, drier and windier than normal.

Finding 1 – District Prescribed Fire Program

The Rock Springs District is completing up to five prescribed fire projects each year with up to 10,000 acres being burned. The Rock Springs prescribed fire program seems to be meeting the current needs and capabilities of the District, but numerous projects have already been identified for the future. This is in addition to the increased emphasis in prescribed fire by the Bureau: the prescribed fire workload in the Rock Springs District will most likely increase significantly.

The program is operating within the standards, procedures and guidelines established by the Bureau.

The Lizzie Springs Prescribed Fire appears to have been well planned and properly executed, but inadequately documented.

Personnel holding key overhead positions on the prescribed fire were qualified to perform those duties.

Recommendation

Even though current needs are being met, coordination and communication between the resource advisors, fire ecologist, fire control officer and management can be improved. The District prescribed fire planning team needs to meet throughout the entire planning process – project identification and priority setting to execution. All decision and critical information needs to be documented.

Finding 2 – Responding to Changing Weather and Fuel Conditions

Lizzie Springs burn site had heavier than normal fine fuel accumulation from two seasons of rest from grazing. During the 1996 fire season drought conditions existed throughout the state. These drought conditions affected the heavier fuels in the conifer and aspen timber. It was also recognized that these areas contained heavy fuel loading.

The weather after the burn was unusually warm, dry and windy.

Patrolling continued for five days after the burn and then patrol crews were assigned to other burn projects. Smoke was still visible in the Lizzie Creek drainage as much as seven days after the burn.

After completion of the Lizzie Springs burn, but prior to the escape, two other non-Bureau prescribed fires in the state had escaped. During this time, the District completed two other prescribed fire projects successfully.

All of the above items were known to District personnel, but no adjustments were made in the operational procedures. The Lizzie Springs Prescribed Fire escaped on the eighth day after ignition when a high wind event occurred.

Recommendation

Burn plans are written based on normal conditions. The burn plan and operational procedures must be adjusted when conditions are, or are anticipated to be, different (weather, fuels, engine breakdown, water source problems, etc.) than was planned. Additional patrol and mop up was warranted by the unusual fuel and weather conditions and the fact that fire still existed in the unit on the fifth day after the ignition. The shortage of fire qualified personnel at the time contributed to the inadequate mop up and patrol.

Finding 3 – Burn Plan Content and Review

While this item may have only indirectly contributed to the escape of the Lizzie Springs prescribed fire, it is still a significant item and the review team thought it appropriate to make the following comments:

The prescribed fire plan for the Lizzie Springs met the requirements as outlined in the 9214 Manual. However, many items in the plan were minimally covered (both resource and fire

objectives and safety); in fact, test burn, mop up, patrol and complexity were not mentioned at all. Key items were often difficult to find (burn windows, maps) and some required documents are not included as part of the burn plan (Go-No Go Checklist, Medical Plan), or other were attached but were not referenced in the plan (Job Hazard Analysis). A question exists as to whether dispatch (pg 5 of 7, #15 under the Medical Plan) center and other identified personnel were notified of the burn and notification was made.

Technical reviews have been occurring on the District's burn plans. The District is using a checklist to assure all components in the burn plan are included. If the technical review is for the purpose of assuring that all required components of a burn plan are covered with sufficient detail to execute the project safely and effectively, then additional guidance may be needed for the review process. In this case, the reviewer was also the Burn Boss and several trips were made to the site. A significant amount of information was retained but never documented in the plan. The burn plan, in addition to the operational aspects, is the Bureau's approved document that must stand the legal tests should attention be drawn to the project.

Recommendation

Develop a new Prescribed Fire Plan format that is a single, stand alone, operational document. Only then will the Burn Boss and other key people on a burn have all the necessary information in one place and the document be able to stand any legal tests should it be required.

On the project map identify two perimeters, the first being the project area/boundary, the second being a contingency area/line to identify the acceptable limits. These entries on a map provide management and specialists necessary decision making information and assures coordination between programs prior to the burn plan approval.

Assure that the technical review occurs on every burn plan and the comments cover components and operational aspects to assure a stand alone product.

During the closeout, it was identified that the National Office would provide a prescribed fire "packet" for the District's consideration. It would contain the burn plan and all attachments. In addition, the National Office volunteered to participate in the review of the District's next prescribed fire plan.

Finding 4 – Trained and Qualified Personnel

The 1993 Fire Management TPR states, "The number of qualified personnel to accomplish the current level of burning (4000 acres per year) is lacking. Future demands to increase the yearly accomplishments will further impact the need for more qualified personnel." See attached finding – item #4. The District has made limited progress. They now have a qualified burn boss.

Recommendation

Implement the 1993 recommendation. The District is operating a potentially expanding prescribed fire program with a limited number of personnel filling all key positions. A program

needs assessment should be developed to determine the number of trained and qualified people needed to meet the demands of the future. Recruitment for District personnel interested in participating in the prescribed fire should occur and a long term training plan should be developed.

Response to the four statements that identified the evaluation team's purpose for being at the Rock Springs District:

1. Prevent future escapes from occurring and establishing accountability

These findings and recommendations address this objective. Rock Springs District personnel are now well aware of the need to adjust burn plan elements to compensate for changes in fuel and weather conditions.

2. Determine if policy, guidance, and procedures relating to operation and safety are adequate.

The District is generally meeting the policy, guidance, and procedure requirements but their program coordination and communication is strained. These items can be resolved. See recommendation #1. The content of their burn plans needs to be improved. The plan must be a stand alone document that reflects all decisions and is defensible. The expertise to accomplish this is present in the District.

3. Determine the level of awareness and attitude of the personnel involved toward procedures and guidance before escapes occur.

The Lizzie Springs Prescribed Fire personnel were well qualified and experienced. They had excellent attitudes toward following the procedures and assuring a safe and complete operation.

4. Determine extent of prescribed fire training and experience level of personnel involved.

All key people involved in the burn operation were fully trained and experienced for their assignments but their numbers were barely adequate to execute a single prescribed fire and insufficient for multiple projects. The recent approval to hire two career seasonal fire people and ability to keep them on into the fall will provide some relief.