

9210 (FA-130)

Memorandum

To: State Director, Utah

From: Director, Office of Fire and Aviation

Subject: Pahcoon Escaped Prescribed Fire Review

Attached is the final report on the Pahcoon Escaped Prescribed Fire Review which was conducted June 29, 30 and July 1, 1998. The objectives of the review are identified in the report.

The escaped fire that occurred can be attributed to the failure to adjust operational procedures to reflect the additional on-site fuel loading and an attempt to "black line" on the extreme upper end of the prescription. The individuals involved are well aware of this error. Their attitudes are very positive and they have a strong concern to conduct a safe and efficient prescribed fire operation.

The team greatly appreciates the support of the State Office and the District's management team and staff for their cooperation and support. If we can be of further assistance, please let us know.

Attachment

cc:
Aviation Program Manager
Fire Program Manager
NIFC Administrator

FA-130:A Carriere:pm:7/20/98:5150

Subject: Pahcoon Prescribed Fire Escape Review
Cedar City District
Dixie Resource Area

Date: June 29, 30 and July 1, 1998

Review Team: Al Carriere, Prescribed Fire Specialists, National Office of Fire and Aviation
Roger Zortman, Deputy State Director Operations, Utah State Office.
Effie Delmar, Range Management Specialist, BIA-Southern Paiute Field Station
Eddy Lente, San Carlos Apache Tribe Fire Specialist, BIA-Phoenix Area Office.

Participants: XXXX

On June 24, 1998, the Utah State Office notified the National Office of Fire and Aviation that the Pahcoon Prescribed Fire had escaped and that, per the guidelines in the H-9214-1 Handbook, they were requesting a team to review the prescribed fire project. Based on preliminary information, it was decided to assemble a team consisting of a Manager, a Prescribed Fire Specialist, a State Office representative and a BIA representative to do the review. Due to the short timeframe, we were unable to locate a Manager who could participate. The Bureau of Indian Affairs asked to have two representatives, one from the local office and one from their area office. It was not known to the National Office of Fire and Aviation, Boise, Idaho, at the time of the request that State lands were also involved. At the opening meeting, Merlin Baker, Utah State Forestry, was offered the opportunity to participate as a member of the team. Mr. Baker did not think it was necessary, but requested a copy of the final report.

The purpose of the review was:

To prevent future escapes from occurring and to establish accountability.

To determine if the Prescribed Fire Plan was adequate for the project.

To determine if the prescription, actions and procedures set forth in the Prescribed Fire Plan were followed.

To determine if overall policy, guidance and procedures relating to prescribed fire operations are adequate.

To determine the level of awareness and the understanding of the personnel involved in regard to procedures and guidance.

To determine the extent of prescribed fire training and experience levels of personnel involved.

Specific findings are discussed under " Findings and Recommendations."

Pahcoon Prescribed Fire Project - Background.

This prescribed fire project was first discussed between the Dixie Resource Area management specialists and the Cedar City fire management staff in the fall of 1997. An initial field visit was made in January 1998 with the Dixie resource management staff, the Cedar City fire management staff and the St. George Fuels Management Specialist. Communication and coordination between the staffs was good, as issues, concerns, and constraints were identified. The Environmental Assessment was completed by the Dixie Resource Area staff in January 1998. The project was identified as a high priority within the Dixie Office and the Cedar City Office.

Discussions between the St. George and the Cedar City fire management staffs occurred, and it was decided to have the St. George office handle the implementation of the project. An attempt to put in "black lines" in April 1998 during a local training session was canceled due to weather. A separate prescribed fire plan for "East Side Black Lining" had been prepared and approved. Further opportunities to put in black line were also limited by weather. The Prescribed Fire Plan was completed by the St. George Fuels Management Specialists on May 13, 1998. The prescribed fire plan was received at the St. George District Office in late May. The plan was signed by the Cedar City District Manager on June 10, 1998. Additional discussions between the fire management staffs indicated the project was becoming a lower priority for the Arizona Strip fire management staff. The project remained a high priority for both the Dixie and Cedar City Offices. When the burn plan was received at the Cedar City Office, the FMO decided that the Cedar City fire staff would implement the project due to time constraints. At that point, the (FCO) was assigned as "Burn Boss." The project area received light rain on June 16, 1998. Fire line improvements were made June 18 and 19 to allow engine access along the eastern boundary. The intent was to burn in black lines for one or two days and burn out the unit at a later date. The first execution of the project was attempted on June 22, 1998; this initial action resulted in the escape. The escape burned about half of the project area.

Causal Factor: The escape was caused by a "spot fire" or "slop over" (adjacent to, but outside of, the control line) which the on-site holding forces were unable to contain.

Contributing Factors: 1) An above normal fuel loading was present on the burn area. The amount of cheat grass on the burn area was far in excess of normal fuel loadings. This was caused by above average spring moisture. 2) The attempt to "black line" the east side of the burn area was undertaken at the upper limit of the plan prescription.

Findings Related To The Escape:

Finding 1 - District Prescribed Fire Program

The Cedar City Office has been completing at least one and up to four prescribed fire projects each year. For FY98 eight projects for 4,000 acres are planned. Out year plans would continue this trend. It should be noted that this was the Dixie Resource Area's first prescribed fire project for many years. Out year planning shows a few projects for the next few years. The workforce that is qualified for prescribed fire operations is marginally adequate to accomplish the existing workload, and may be inadequate for future years.

All personnel assigned to the Pahcoon prescribed fire project were qualified for the positions

which they held. Experience in prescribed fire and in the affected fuel type vary considerably. Limited experience in the fuel type by the burn boss was a contributing factor.

The engine foremen involved have a positive, proactive safety attitude citing examples of actions taken to limit hazard exposure to on-site personnel.

Coordination and communication between the Dixie Resource Area resource management staff and the Cedar City fire management staff were adequate and appropriate for the project.

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

Recommendation

The new Fire Management Plan identifies the need for a Fuels Management Specialist at the Cedar City Office. The current fire management workload and the projected prescribed fire workload would meet the guidelines for filling this position. Management should consider filling this position as soon as the Fire Management Plan is approved. Establish formal training plans to upgrade prescribed fire qualifications of current PFT and WAE personnel who will be involved in the prescribed fire program.

Finding 2 - Above Normal Fuel Loading

The site had an above normal fuel loading consisting of heavy cheat grass. The live fuel moisture in the shrubs was above optimum levels for prescribed fire, however this was offset by the heavy cheat grass which was fully cured. The Burn Boss recognized the situation and took some actions to deal with the situation. He had an extra (above what was called for in the prescribed fire plan) light engine on site and had a "pumpkin tank" set up as a water source. These actions did not fully offset the potential increased fire behavior represented by the additional fuel. There may have been a false sense of security provided by the higher live fuel moisture levels. Additional holding forces would have been justified by the existing conditions.

Recommendation

Prescribed fire plans are written on "normal" conditions. The plans and operational procedures must be adjusted when conditions are, or are expected to be, different than was originally planned. Additional holding and patrol resources were warranted in this situation. The burn boss is responsible for assuring the parameters in the prescribed fire plan are adequate for the existing situation.

Management should support the concept that prescribed fire burn bosses should ask for and get resources necessary to conduct a safe and efficient operation.

Finding 3 - Prescription Parameters

The prescribed fire plan, as written, met the existing Bureau standards and was adequate for the project. The Go/No Go checklist, a briefing, a request for a spot weather forecast were completed and a test fire was conducted prior to beginning the black lining operation. It was

anticipated that firing operations would be complete by 1400 hours when increased winds were forecast.

The prescribed fire plan states that, "Black lining should occur on the cooler end of the prescription" (see pages 4 and 5 in the burn plan). Black lining was attempted at the high end of the prescription. Two of the plan's prescription parameters were exceeded at the time of the escape.

The plan called for a "fire line at least 12 inches and no more than 18 inches wide to mineral soil along the boundary." The line was moved from a mid-slope location to a more favorable location at the base of the slope. In place of a mineral soil fire line a "saw line" was established. Trees and brush were removed to permit engine access and "wet line"(water and wetting agent) was used to secure the fire's edge after it was lit. It cannot be determined if the lack of a physical mineral soil fire line contributed to the escape.

The above items represent substantial changes to the prescribed fire plan. Prior to the operation, the District Manager did give the burn boss verbal approval to change the prescribed fire plan as deemed necessary. Such changes should normally have been reviewed and approved in writing by the District Manager.

Recommendation

Where substantial black lining operations are required, consider the development of a separate prescription to address specific environmental conditions required for the black lining operation. (Note: Such a plan was developed and approved for an earlier attempt to burn black lines. However, this attempt to burn lines was conducted under the overall project prescribed fire plan.)

Managers should discuss with the fire staff and burn bosses what latitude they are willing to give to burn bosses with regard to on-site modifications to the burn plan. Absent specific direction, burn bosses are required to operate within the parameters set forth in the approved burn plan.

Burn bosses need to understand that they will be supported by management when they make a decision not to burn.

Findings Not Related To The Escape:

Finding 4 - Interoffice Coordination

The "Trading Post" concept at the St. George office has left the prescribed fire/fuels management portion of the fire management program at the Dixie Resource Area without clear direction.

The St. George Office is handling the suppression portion of the fire management program for the Dixie Resource Area. Clear direction for the prescribed fire portion of the program has not yet been established. This may have contributed to confusion about which office was going to implement the Pahcoon project and what priority the project should have.

Recommendation

Office managers and FMO's should negotiate a clear set of responsibilities concerning the prescribed fire workload associated with the Dixie Resource Area. This should be a written document with the appropriate signatures and should be reflected in the FMO's Delegations of Authority. This should be accomplished by FY99.

Finding 5 - Communication and Cooperation with the BIA and the Tribe

This project was adjacent to the Shivwits Indian Reservation. While the tribal chairman was contacted and sent a copy of the E.A. for the proposed prescribed fire project, no face to face meetings or on the ground review occurred. With the absence of the local BIA FMO, there was confusion about who to contact when the fire escaped; local agency administrators were not notified. Notification to other local BIA officials or the area BIA office should have occurred.

Recommendation

The Cedar City Office has initiated a local MOU relating to communication, cooperation, and coordination relating to projects that could affect Indian lands. This MOU should be completed as soon as possible. This effort should emphasize meetings and field trips over a formal notification process. (The St. George Office should consider designating one individual as the key contact with the tribe/band.)

The inclusion of BIA and Tribal representatives in the "Rehabilitation Evaluation" and any resultant plan and field operations would be an excellent opportunity to further relationships.

Summary Statement

The Cedar City District prescribed fire program is meeting the current District needs and has the knowledge and skills to implement an efficient and effective program. The personnel involved with the program have a very positive attitude and a strong desire to conduct a safe and effective operation.