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Route To:

Subject: Cascade Complex Accident Prevention Analysis

To: Directors and Forest Supervisors

The Cascade Complex Accident Prevention Analysis is now released and posted on the web. This report examined the circumstances surrounding three events: the entrapment of two fire support contractors, implementation of the “stay in place plan” for the Cascade Complex Incident Command Post, and the decision to remain at that same ICP after the event. The process used to review and investigate the accidents analyzed in the report may not be familiar to many of you. The Accident Prevention Analysis (APA) process has several unique characteristics:

- The APA process is designed to meet the intent of the Forest Service Serious Accident Investigation (SAI) process but incorporates the Doctrinal approach of principal-centered performance rather than rule-focused compliance.
- The process forces a focus on the ‘upstream’ culture and the organization that influenced performance. This goes beyond the proximal root cause that is typically labeled a *causal factor* in other types of investigations.
- Using an APA instead of the more typical SAI process does not relieve anyone of accountability for their actions. Had there been any evidence of a willful disregard for human safety, the APA process would have been terminated and an Administrative and/or Law Enforcement Investigation would have been instigated.
- The process values learning over blaming. The analysis is sufficiently complete to enable the reader to understand what the decisions were made at the time, why they were made and how those decisions seemed right, making perfect sense at the time. This is very powerful because the players in this event were our most qualified and competent. If their decisions and actions made sense to them at the time, it is very likely similar decisions and actions will make sense again to others unless we share this experience and learn from it.

Enclosed is a question and answer document that further elaborates on this review. I encourage every line officer and firefighter to read the report, discuss it, and learn from it. You can download the report at: <http://www.fs.fed.us/fire>, under the heading: “What’s New.”



Using a new process is never easy, especially when we are learning and applying what we learn at the same time. For their willingness to facilitate the APA I want to acknowledge the leadership, energy, and enthusiasm of the entire review team—thank you for your efforts.

To all of the people interviewed for the story—thank you. Your accounts and reflections make meaning out of timelines and events. It is my hope that the story documented here serves to stimulate thinking and actions that contribute to us all being safe in our work.

/s/ Cathrine L. Beaty
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Enclosure

cc: Rose Davis
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Questions and Answers
Cascade Complex Accident Prevention Analysis
December 3, 2007

Q: What is an Accident Prevention Analysis (APA)?

A: An APA has several unique characteristics:

- An APA is an alternative investigation process to examine an incident or series of events that could otherwise be analyzed through a Serious Accident Investigation (SAI) based on Forest Service Manual direction.
- While all incidents involving fatalities should use the SAI process, other events such as ‘near misses’, entrapments and burnovers can choose the APA process based on the severity of the incidents to create a product that encourages learning.
- The APA process is predicated on the foundation of a ‘Just Culture’ in which acknowledges that employees are humans and thus they inevitably make errors and mistakes. Individuals remain accountable for their behaviors, but management is held accountable for designing and controlling the systems in which the humans make their decisions. Just Culture also recognizes that managing safe systems and safe performance is a dynamic and continuous process that relies on a workforce that freely reports success and failures.
- While privilege or immunity is not a part of the APA process, all information gathered by the APA team is treated with the utmost confidentiality and prohibited from being disclosed to management officials. This process is designed to ensure employees are not punished administratively for sharing their mistakes and errors.
- APA also reflects elements of the Forest Service Fire Suppression Doctrine that strives to lead people to make good decisions based on the principles espoused by the organization rather than strict adherence to a multitude of rules.

Q: What events are included in the Cascade Complex Analysis?

A: This Analysis examined the circumstances surrounding three events: the entrapment of two individuals on the Warm Lake Road, implementing a *stay-in-place* plan, keeping the incident command post in place knowing the fires would surround it, and keeping the incident command post in place for several days under heavy smoke conditions.

Q: How does an APA differ from a SAI?

A: There are two principle differences between an SAI and an APA. The first is how the processes determine the cause of an accident. The methodology of the SAI process results in a focus on active failures or *proximal root causes*. These are the obvious or clearly apparent errors or rule breaking behaviors of an individual (normally an employee). Invariably, in the SAI process, an employee’s behavior will be found as a causal factor of the accident.

Recommendations are then developed to correct or mitigate future employee mistakes. The APA process however doesn't ignore active failures but it recognizes that it may be more effective to look at the organizational and cultural factors that influence employee performance and reliability. Using James Reason's model of accident causation, the APA focuses on the latent factors (the Swiss cheese layers) as the causes of the accident.

The second difference between an SAI and an APA is the narrative. In a SAI the narrative is designed to be an objective disclosure of the facts of the incident and is restricted to only the facts that can be substantiated by evidence. In contrast, an APA constructs a factual story that is designed to show the reader how the events were interpreted by those involved and how the decisions and behaviors of those involved made sense and seemed reasonable to them at the time. The factual narrative of an APA is designed to be a learning tool. The rationale is that if a given behavior made sense to normal, qualified and competent employees once, then it will likely make sense to other employees in the future resulting in similar or even worse outcomes. If the story conveys this effectively and truthfully, other employees can learn from the portal experience of those involved.

Q: How is an APA related to Doctrine?

A: The APA is predicated on the conclusion that safety is not an end state. In contrast, safety is creativity in the face of risk. In the wildland fire environment, where risk is ubiquitous, *safety is continuous creativity*. Principle centered management (Doctrine) relies on employee creativity that is aligned with clear values of sound and intelligent risk management. In the wake of an unintended outcome, the APA process seeks to disclose where the agency has not effectively articulated these values or aligned its employees with the expressed values.

Q: If no one was seriously injured, why do an APA?

A: A hallmark of high reliability organizations is a preoccupation with failure; that is, paying very serious attention to close calls. Indeed, close calls and near misses are what safety experts refer to as *free lessons*. Events such as the entrapment and the decision to not relocate the ICP could have had very different and very serious negative outcomes. If there had been a fatality from any of the events learning opportunities would have been obscured by legal issues and concerns of self incrimination. Moreover, the numerous smoke related injuries resulting from the decision to keep the ICP in place are considered very serious. .

Q: Was there reckless behavior in the events surrounding the Cascade Complex?

A: No. If the APA Team or the Agency Administrator that chartered the team had found evidence of a reckless disregard for human safety, the APA process would have ceased and a different approach such as an Administrative or Law Enforcement Investigation would be recommended.

Q: Is the story factual?

A: The APA process recognizes that history remembered is never identical to the way things exactly happened. Everyone has biases and misperceptions, including report writers. The overt bias of the APA process is to tell what truthfully happened from the perspective of those involved.

Less emphasis is placed on what the participants *should have known - but didn't*; and more emphasis is placed on how things made sense at the time. The team went to great lengths to corroborate the accounts of over 100 interviewees and compose a factual account of what the participants believed happened and adjusted by photographic evidence and specialist reports such as the Fire Behavior Analyst Report.. The APA process also asks the participants to review the story to confirm it captured their actions correctly.

Q: How should the Report be used?

A: First and most importantly, read the Story. It can be even more effective if you read it as part of a group assignment and then come together to discuss what you read and what you understood about the events surrounding the incidents. Next move on to the Lessons Learned by the Peers and analyze how you could have applied the lessons to the Story or how you can use these lessons in your experiences. The Doctrinal principle-centered approach in fire management should then encourage you to rise above individual actions outline in the APA Story, and really explore the Lessons Learned Analysis as to how the current organizational rules, processes and culture play an important part in creating environments that led to the decisions made in the Story. The Human Factors Analysis in the APA applies to everyday life and the Fire Behavior Specialist report is certainly a portent of things to come.