DEVELOPING A FIRE INSPECTION PROGRAM

Leading Community Risk Reduction

Developing a Fire Inspection Program for the Crater Lake Engine Company

Jack W. Northcutt
Crater Lake Engine Company
Crater Lake, Oregon

December 2007
CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: _____________________________________________
Abstract

The problem was that Crater Lake National Park (CRLA) has failed to perform fire inspections mandated by the U.S. Department of the Interior. The purpose of this Applied Research Project was to research the required components of an engine company inspection program which, if implemented, would improve compliance with fire and life safety codes for CRLA. Descriptive research methodology was utilized to answer questions regarding the authority and responsibility the National Park Service (NPS) has to perform inspections. Questions were answered using descriptive methodology and interviews concerning the qualifications required by the NPS and what components and resources are needed for a successful company fire inspection program. The results indicated and the recommendation was made that CRLA should implement a company inspection program.
# Table of Contents

<table>
<thead>
<tr>
<th>Abstract</th>
<th>Page 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents</td>
<td>Page 4</td>
</tr>
<tr>
<td>List of Tables</td>
<td>Page 5</td>
</tr>
<tr>
<td>Introduction</td>
<td>Page 6</td>
</tr>
<tr>
<td>Background and Significance</td>
<td>Page 6</td>
</tr>
<tr>
<td>Literature Review</td>
<td>Page 10</td>
</tr>
<tr>
<td>Procedures</td>
<td>Page 15</td>
</tr>
<tr>
<td>Results</td>
<td>Page 18</td>
</tr>
<tr>
<td>Discussion</td>
<td>Page 20</td>
</tr>
<tr>
<td>Recommendations</td>
<td>Page 22</td>
</tr>
<tr>
<td>References</td>
<td>Page 24</td>
</tr>
<tr>
<td>Appendix A: Table 1: Typical Fire Inspection Report Format</td>
<td>Page 27</td>
</tr>
<tr>
<td>Appendix B: Table 2: Inspector Training and Qualifications Required by the NPS</td>
<td>Page 28</td>
</tr>
<tr>
<td>Appendix C: Telephone Interview Form</td>
<td>Page 30</td>
</tr>
</tbody>
</table>
Tables

Table 1: Typical Fire Inspection Report Format ................................................................. 27
Table 2: Inspector Training and Qualifications Required by the NPS ................................. 28
Developing a Fire Inspection Program for the Crater Lake Engine Company

Introduction

The National Park Service (NPS) is the federal government’s third largest landlord. However, the NPS is not performing adequate fire inspections of the facilities for which it is responsible (General Accounting Office [GAO], 2000). The research problem is that Crater Lake National Park (CRLA) has also failed to perform fire inspections (HYT, 2007). This failure to inspect park buildings for fire code violations and correct them leads to unsafe conditions which put the public, park employees and firefighters at risk (GAO, 2000).

The purpose of this Applied Research Project (ARP) is to research the required components of an engine company inspection program which, if implemented, would improve compliance with fire and life safety codes for CRLA. Descriptive research methods were used to address the following questions: (a) What authority does the NPS have to perform inspections? (b) What responsibility does the NPS have to perform inspections? (c) What qualifications are required by the NPS to perform inspections? and (d) What are the components and required resources needed for a successful company fire inspection program?

Background and Significance

In order to understand the nature of the problem and to make appropriate recommendations, the researcher described the recent history of the problem. In doing this, the researcher incorporated past and current activity in the area of fire inspections into recommendations that will provide realistic and sustainable improvements for the CRLA community. The mission of the NPS, and therefore Crater Lake National Park, is “to conserve the scenery and the natural and historic objects and the wild life therein,” and to do so in a way that “will leave them unimpaired for the enjoyment of future generations” (National Park Service
Developing a Fire Inspection Program

Organic Act, 1916). The mission requirement of conservation allows use of the parks while managing them for protection. When applied to fire protection of national parks, the concept of conservation requires both suppression and prevention. In the past, CRLA has had a reactive posture to structural fire, with emphasis and resources devoted to fire suppression. The Crater Lake Engine Company’s future may well depend on its ability to develop and maintain a comprehensive and efficient fire prevention program including regular fire inspections.

CRLA is remote and has limited access to outside support services. The park is located in south central Oregon in the Cascade mountain range and covers 182,700 acres. The elevation of the park ranges from 4,500 to 7,600 feet, with an annual snowfall averaging 533 inches. Snow pack remains on the ground for nine months of the year, with some areas under snow even through the summer months. There are over 100 miles of roadways within the park, including 20 miles of Oregon State Highway 62, which remains open year round. Most other roadways are closed during winter due to heavy snow accumulation. Around 500,000 people visit the park each year, including staff, sightseers passing through the park, and visitors staying overnight in the lodge, cabins and campgrounds (Harmon, 2002). A concessioner provides lodging, food service, fuel and merchandise for sale; all other support services for residents and visitors are provided by the NPS.

The Crater Lake Engine Company (CLEC) and Crater Lake Wildland Fire Management provide fire prevention and suppression services within the park. The NPS is responsible for maintaining buildings and structures, and for providing emergency services including law enforcement, wildland and structural fire suppression, emergency medical services, and search and rescue. CRLA operates two stations. One houses structural fire Engine 9111 and Crater Lake Ambulance 9171, and the other, wildland Engine 9151. The engine company provides fire
suppression, motor vehicle crash rescue, emergency medical services, search and rescue and
confined space rescue.

Mutual aid for structural fire suppression services is limited. Klamath County Fire
District One, located 63 miles south in Klamath Falls, Oregon, is the closest paid fire
department. The estimated response time to CRLA is from 1 hour 30 minutes to 2 hours. This
response time varies depending on apparatus availability, traffic on State Highways 62 and 97,
and road conditions which are frequently hazardous due to weather. Mutual aid is also available
from the Chiloquin-Agency Lake Rural Fire Protection District, a volunteer fire department
located 35 miles south of the park. Estimated response time for the Chiloquin department is 45
minutes to 1 hour (HYT, 2007).

Fire prevention should be the top priority for Crater Lake National Park because of its
remote location. A single fire incident could have devastating consequences for the park. For
example, since snow removal and road maintenance are critical operational tasks at the park, if a
fire in winter were to destroy the maintenance building, which houses the entire fleet of eight
snowplows, it would force closure of the park and State Highway 62. The age and nature of
structures at Crater Lake makes them susceptible to fire. CRLA has twenty-four 1930’s era
buildings listed on the National Register of Historic Places and one building that is designated a
National Historic Landmark (NPS, 2007). Almost all of the buildings in CRLA are Type V,
wood construction and only 13% are protected by fire sprinkler systems. In May of 2000, the
Government Accountability Office, then called the General Accounting Office (GAO), released
a report prepared for the United States Senate titled Park Service Agency is Not Meeting Its
Structural Fire Safety Responsibilities. The report identified several fire program areas that were
lacking, including inadequate or nonexistent fire inspections (GAO, 2000). In August, 2003, the
National Park Service contracted with URS Corporation for an Environmental, Safety and Health Audit of Crater Lake National Park. Of the 82 findings, 25 were fire safety related (URS, 2003). In June, 2006, the NPS contracted with Carter-Burgess Incorporated to perform Fire and Life Safety inspections. The inspector found 67 code violations requiring action at CRLA. Also in June of 2006, HYT Corporation audited the Crater Lake Engine Company. The resulting report, *National Park Service Structural Fire Response Analysis – Crater Lake National Park*, listed a number of shortfalls, including the lack of a Fire Prevention Inspection Program, and suggested merging the CLEC with the closest mutual aid department, in Chiloquin, Oregon (HYT, 2007).

The results of these inspections and audits forced park management to reallocate resources in order to correct deficiencies within deadlines assigned by the NPS Pacific West Regional Office (PWRO). Operations, projects and initiatives were either delayed or not accomplished due to the reallocation of resources. Crater Lake National Park was recently mandated by the PWRO to submit a plan and timeline to address findings of the most recent audit, by HYT.

This Applied Research Project (ARP) relates to one of the 5-year operational objectives of the United States Fire Administration (USFA, 2003) listed in the *Leading Community Risk Reduction Student Manual* (NFA, 2005): to develop a “comprehensive, multihazard risk-reduction plan for 2,500 communities, led by or including the local fire service.” Properly executed fire prevention inspections are part of the strategy laid out in the course introduction for Leading Community Risk Reduction (NFA, 2005). Key concepts and attitudes include “code enforcement; …plans review and design…and other mitigation activities” (p.0-15). *Fire Inspection and Code Enforcement* (IFSTA, 1998) states that “fire prevention inspections are the single most important non-fire fighting activity performed by the fire service” (p.5).
Clearly, fire prevention is a key strategy for Crater Lake National Park. Before beginning
detailed work on fire prevention inspections for the park, the researcher reviewed applicable
work of others in this area.

**Literature Review**

The researcher reviewed literature on the subject of developing, implementing and
managing fire inspection programs. Federal guidance and regulatory documents at the
Department of the Interior and National Park Service levels were examined to determine the
authority and responsibility to perform fire inspections. Second, NPS policy was reviewed to
identify the certifications and training required to perform fire inspections. Finally, manuals,
National Fire Protection Association (NFPA) standards, Executive Fire Officer (EFO) Applied
Research Projects (ARP’s) and interviews with NPS fire personnel were researched regarding the
components and resources required for a successful fire inspection program.

A fire inspection program using engine company personnel is not a new concept. In
1947, *The President’s Conference on Fire Prevention, Report of the Committee on Firefighting Services* stated that “it has long been customary for fire companies in many cities to make fire prevention inspections. The practice is by no means general, and it could, with profit, be more widely observed” (p.10). The Report of the National Commission on Fire Prevention and Control titled *America Burning* (1973) had this to say about company inspections, “they can conduct inspections to enforce local codes, ordinances and common-sense fire prevention practices….For the sake of pre-fire planning, they can conduct familiarization inspections of structures and areas where their services may be needed someday” (p.38). Vanlandingham (2006) described an added benefit to company fire inspection programs, that they give the
Developing a Fire Inspection Program

firefighters the opportunity to tour the facilities in their jurisdiction and complete pre-fire plans, resulting in “safer and more effective operations on the fireground” (p.7).

The United States Congress granted the National Park Service the authority to perform fire safety inspections (NPS Organic Act, 1916). Authority to inspect is also codified as *Inspections and Abatement, Conduct of Inspections* (1980). Department of the Interior Manual (DM) 485, chapter six, *Inspections and Abatement* (DOI, 1999) and NPS Reference Manual (RM) - 50B *Occupational Safety and Health* (NPS, 1999) assign parks the task of taking protective and corrective action to rectify any imminent danger. The *NPS Management Policies* (NPS, 2006) contain policy called the Structural Fire Protection and Suppression Program for the purpose of carrying out this task (p.9.1.8). The NPS fire protection program was developed to ensure that all national park areas are adequately protected, and that this protection is provided in a safe and cost-effective way by trained personnel, using appropriate equipment and techniques. This policy details the operational policies, standards, procedures and accountability for structural fire management in the NPS, including protecting cultural resources, managing emergencies, detecting, suppressing and rehabilitating from fire incidents (NPS, 2006).

Park Superintendents are required to complete a structural fire assessment and develop a structural fire plan. NPS Director’s Order (DO) – 58, *Structural Fire Management* (NPS, 2004) states that fire prevention activities including “standardized and regularly scheduled fire inspections” are the “primary means of addressing and correcting NPS structural fire deficiencies” (p.3). NPS RM - 50B (NPS, 1999) lists Occupational Safety and Health Administration (OSHA), DOI, and NPS safety and health officials as having the right to enter any facility, construction site, or other NPS workplace to perform an inspection (p.4.2). Not only is the NPS given authority to perform inspections, it has a responsibility to perform them. The
Department of the Interior requires that each agency in the department formally inspect all establishments under its control. DM 485 (DOI, 1999) chapter 6 states that “formal inspections and preoccupancy inspections are to be conducted by qualified individuals” (p.1). DM 485 chapter 19, Fire Safety, requires that fire detection and suppression systems and equipment be inspected at least annually and that records of inspections and corrective action be kept.

The general responsibility for conducting inspections is detailed more fully in NPS DO – 58 (NPS, 2004), and subsequent directives RM - 50B (NPS, 1999, p.4.2) and RM – 58 Structural Fire Management (NPS, 2004, p.29). These documents define appropriate operational procedures and program requirements for carrying out inspections mandated by the DOI. DO - 58 (NPS, 2004) requires that parks conduct a comprehensive structural fire condition assessment and maintain records of inspections. Concessioners must maintain fire detection, alarm, and suppression systems to NFPA standards in buildings that they operate.

Program objectives of DO - 58 (NPS, 2004) are to prevent and minimize the damage resulting from structural fire “by adopting and enforcing, as minimum standards, NFPA 1 Fire Prevention Code, NFPA 101 Life Safety Code, and all other associated codes and standards” (p. 5). NFPA 1 states that “this code shall be administered and enforced by the Authority Having Jurisdiction (AHJ) designated by the governing authority” (NFPA, 2006, 1.6). In the National Park Service, the AHJ’s are the Regional Directors, who have delegated that responsibility to the Regional Structural Fire Management Specialists (NPS, 2004, p.7).

NPS RM – 58 (NPS, 2004) identifies four positions that may perform fire inspections. These include the Regional Structural Fire Management Officer (AHJ), Park Fire Prevention Officer, Park Fire Inspector and Engine Company Officer (pp.81-89). The primary qualification to perform inspections is NFPA Fire Inspector I certification or equivalent (p.87). Appendix B,
Table 2 lists additional qualifications and training requirements required by the agency for those performing fire inspections (NPS, 2004).

NFPA 1031 (NFPA, 2003) *Standard for Professional Qualifications for Fire Inspector and Plans Examiner* details qualification requirements for Fire Inspector I. The standard states that a Level I Fire Inspector may be someone “whose primary job responsibilities are not fire inspection” (p.A.4.1). The individual must, however, have a basic understanding of fire behavior, fire prevention, and codes and standards used by the jurisdiction. The Fire Inspector I must also be familiar enough with alarm and sprinkler systems to verify that they are operational. Code knowledge is a requirement to the extent that the individual can perform research and “clearly express code requirements orally and in writing” (NFPA, 2003, p. A.1.3.14).

The literature review revealed several components and resources needed for the successful implementation of a company fire inspection program. The first is supervision of the fire inspectors. Second is program management. Third, education and training of the inspectors is required in the in the areas of general fire safety inspections, alarm and suppression systems and plan review. Fourth, equipment and tools are needed to perform inspections. Finally, a system of inspection report recordkeeping is required.

A vital part of the program management is the planning process in which the workload is prioritized based on occupancies and hazards (Vanlandingham, 2006). Management support also involves the need for interfacing and cooperating with managers of areas to be inspected. A successful inspection will include meetings prior to and after inspections (DOI, 1999). Pre-inspection meetings help prevent unreasonable disruption to operations, and help ensure that inspectors receive full cooperation in accessing facilities and records. Post-inspection meetings allow inspectors an opportunity to inform management and employees of any imminent danger
conditions within their buildings and to educate and inform the people they come into contact with about fire and life safety (Sawyer, 2002).


According to *Fire Inspection and Code Enforcement* (IFSTA, 1998), inspectors need equipment and tools to perform inspections. Personal protective equipment includes coveralls, boots, hard hat, safety glasses, gloves, hearing protection, and in some environments, respiratory equipment or devices. An inspector’s tools should include report forms, clipboard, and flashlight. Other equipment such as a Pitot gauge, laptop computer, camera, and gas detector are sometimes required (p.30).

Sawyer (2002) details information requirements for inspectors. They must have access to, and be knowledgeable of, the local fire and life safety codes and standards, as well as previous inspection reports and records of corrected deficiencies. When conducting an inspection, inspectors document their observations and any deficiencies or hazards. They may need to make sketches, take samples or photographs. Inspectors should document construction type, occupancies, and fire detection and protection systems. This information, as well as deficiencies and corrective action to be taken, should be included in the written report (p.15). Appendix A lists the contents of a typical fire inspection report. DOI Manual 485 (DOI, 1999)
chapter 19 provides guidance concerning recordkeeping. Acceptance test reports for sprinkler systems are to be kept for the life of the system. Annual inspection and test reports should be kept for 12 years, while records of corrective measures are kept for three years (p.2). NFPA 72 (2007) requires that acceptance tests for alarm systems be kept for the life of the system and annual inspection reports be kept until the next annual test and one additional year (p.10.6.2). NFPA 1 (2006) states that “the AHJ shall keep a record of all fire prevention inspections, including the date of such inspections and a summary of any violations found to exist” (p.1.11.2).

An interview was conducted with Grand Canyon National Park Fire Chief Kent Mecham regarding their fire inspection program (personal communication, September 22, 2007). Pinnacles National Monument Supervisory Park Ranger Dana Sullivan was also interviewed (personal communication, September 22, 2007). The purpose of the interviews was to find out how fire inspection programs are managed in other national park units.

The researcher’s intent was to recommend that CRLA adopt elements of successful inspection programs, if any were found. Three alternatives were identified in the interviews. Inspections may be accomplished by the Fire Chief, a full-time Fire Inspector, or a contracted Inspector. Due to other duties, the CLEC Fire Chief does not have the necessary time available to perform the inspections or attend the necessary training. CRLA does not have funding available for a dedicated Fire Inspector position, or for a contracted Inspector. The researcher then narrowed the focus of this ARP in the Results section.

Procedures

While attending the Leading Community Risk Reduction course (NFA, 2005) at the National Fire Academy in Emmitsburg, Maryland, the researcher undertook a literature search in
the Learning Resource Center using the on-line catalog. In order to investigate the National Park Service authority and responsibility to perform fire inspections, the researcher examined federal guidance and regulatory documents at the national level in the Code of Federal Regulations (CFR), codified as *Inspections and Abatement, Conduct of Inspections* (1980) and in the NPS enabling legislation (NPS Organic Act, 1916). Authority and responsibility are assigned to perform fire inspections at the department level, in Departmental Manual 485, chapter 6, *Inspections and Abatement* (1999, p.1). At the National Park Service level, NPS Director’s Orders 58 (NPS 2004, p.1) and 50B (NPS, 1999 p.4.2) were examined to determine the authority and responsibility to perform fire inspections.

Second, NPS Reference Manual – 58 (2004, p.87) was reviewed to identify the certifications and training required to perform fire inspections. Finally, manuals (Sawyer, 2002), national standards (NFPA, 1031, 2003) and an Executive Fire Officer (EFO) ARP (Vanlandingham, 2006) were researched regarding the topic of components and resources required for a successful inspection program.

Interviews were conducted with NPS Fire Chief Kent Mecham (personal communication, September 22, 2007) and NPS Supervisory Park Ranger Dana Sullivan (personal communication, September 22, 2007). These individuals are responsible for administering the Structural Fire programs at their parks. They were selected based on the size of the national park units they represent. The parks selected were Grand Canyon National Park and Pinnacles National Monument. Grand Canyon National Park is one of the largest National Park System units in terms of population with around 550 NPS employees in the summer (B. Walker, personal communication, December 3, 2007) and approximately 1,400 structures (J. Beshears, personal communication, December 3, 2007). Pinnacles National Monument has 59 NPS
employees and 73 structures (L. Frusetta, personal communication, December 4, 2007). CRLA has 123 employees and 99 structures (B. Harshaw, personal communication, December 4, 2007).

The interviews were guided by the following questions: (a) Who performs fire prevention inspections in your organization? (b) What qualifications and/or certifications does the individual have? (c) How frequently are inspections performed? and (d) Which occupancies are inspected? The telephone interviews were approximately 10 minutes. The interview format is described in Appendix C.

**Limitations**

The researcher performed 2 interviews in order to determine if other national park units had implemented either engine company inspection programs or if there were other positions assigned to the inspection task. The researcher limited the interviews to program managers in national parks as the NPS requirements do not apply outside of that agency. Additional interviews with NPS Structural Fire Chiefs would have provided more data concerning alternative methods of accomplishing inspections and the resources and components of successful programs.

**Definition of Terms**

Type V construction - a type of construction that is vulnerable to fire, with structural members entirely of wood, often light wood frame elements (Davis, 2000)

Concessions Specialist - a position with responsibility for conducting inspections to evaluate contractual compliance in the operational areas of lodging, food service and other commercial visitor services. Concessions Specialists are also the official point of contact for communications between NPS employees and concessioners (NPS, 2000, p.2).
Concessioners – also called concessionaires, provide commercial visitor services, such as food service, lodging and gift shops (NPS, 2006).

Results

The Results Section utilized the resources found through the literature review and the personal interviews to answer the four research questions. The research questions were: (a) What authority does the NPS have to perform inspections? (b) What responsibility does the NPS have to perform inspections? (c) What qualifications are required by the NPS to perform inspections? and (d) What are the components and required resources needed for a successful company fire inspection program?

Research Question A Results

Based on the literature, the NPS clearly has the authority to inspect all government owned facilities including residential occupancies. In addition, it is within the authority of the NPS to inspect all facilities operated by concessioners. The National Park Service Organic Act (1916), Inspection and Abatement, Conduct of Inspections (1980), Department of the Interior Manual (DOI, 1999) (DM) 485, chapter six Inspection and Abatement (DOI, 1999) and NPS Reference Manual (RM) – 50B (NPS, 1999) provide that authority.

Research Question B Results

Many federal documents require that fire inspections are to be performed, at least annually, in all units of the National Park System. The responsibility is assigned to parks in DOI Manual DM 485 (DOI, 1999), NPS Policy Manual (2006, p.9.1.8), NPS Director’s Orders (DO) – 58 (NPS, 2004) and Reference Manuals RM - 50B (NPS, 1999) and RM – 58 (NPS, 2004). Most notable among the federal directives instructing agencies to perform inspections, DOI Manual 485, Chapter 6 (DOI, 1999) states that “each bureau will formally inspect all
establishments under its control at least annually” (p.1). In addition, NFPA codes and standards requiring inspections were formally adopted by the NPS in DO - 58 (NPS, 2004). “The National Park Service hereby adopts, and will enforce as minimum standards, the most current version of the National Fire Protection Association’s Fire Prevention Code (NFPA 1), Life Safety Code (NFPA 101), and all other associated and standards” (p.5).

Research Question C Results

NPS DO - 58 (NPS, 2004) identifies the minimum qualifications to perform fire inspections as NFPA Fire Inspector I. Additional required training for the four positions assigned to perform inspections is listed in Appendix B. Those positions are the Regional Structural Fire Management Officer (AHJ), Park Fire Prevention Officer, Park Fire Inspector, and Engine Company Officer (pp.81-89).

Research Question D Results

There are several components and resources needed for the successful implementation of a company fire inspection program. The first is supervision and program management. Secondly, education and training of the inspectors is required. Thirdly, an inspector needs equipment and tools. Finally, a system of recordkeeping is needed. Interviews were conducted to determine if other national park units had implemented either engine company inspection programs or if there were other positions assigned to the task. The researcher’s intent was to recommend that CRLA adopt elements of successful inspection programs, if any were found.

An interview was conducted with Grand Canyon National Park Fire Chief Kent Mecham regarding their fire inspection program. Chief Mecham, an NFPA and Arizona certified Fire Inspector, performs fire inspections annually on all non-residential occupancies. Chief Mecham
said that he hopes to add a full-time Fire Inspector to his staff in the next few years (personal communication, September 22, 2007).

Pinnacles National Monument Supervisory Park Ranger Dana Sullivan was also interviewed. The California Department of Forestry and Fire Prevention is responsible for performing fire inspections at that national park unit. The inspectors are certified by the state of California. Pinnacles National Monument has not had fire inspections for more than 3 years. Ranger Sullivan is considering detailing a Fire Inspector from Yosemite National Park or Sequoia Kings Canyon National Park to perform inspections at Pinnacles (personal communication, September 22, 2007).

Discussion

Fire inspection manuals including *Fire Inspection and Code Enforcement* (IFSTA, 1998), *Fire and Life Safety Inspection Manual* (R.E. Soloman, Ed., 2002) seem to be aimed toward the municipal department, with a separate fire prevention division responsible for inspections. The EFO paper (Vanlandingham, 2006), concerned improving the effectiveness of an inspection program that utilized the Fire Chief as well as the 18 career firefighters in the Chambersburg Fire Department (p.2). The subject matter of National Park Service guidelines concerning fire inspections was so specialized that the researcher did not find any literature other than primary source documents. The primary source documents, NPS DO – 58 (NPS, 2004) and RM – 58 (NPS, 2004) provide clear authority and responsibility to parks for inspecting facilities. Based on interviews conducted with Kent Mecham (personal communication, September 22, 2007) and Dana Sullivan (personal communication, September 22, 2007), parks, including CRLA, are not meeting this obligation. This finding supports reports and recommendations issued by both private and federal inspection agencies (URS, 2003) and (HYT, 2007). The
Interviews indicated three alternatives for fire inspection programs. In one instance, the Fire Chief performs the inspections. In a second alternative, a full-time Fire Inspector would be hired. The third alternative is to contract with another fire service entity to perform the inspections.

There is little variance in opinion about the need for fire inspection procedures within the National Park Service. There is also little disagreement among the NPS Authority Having Jurisdiction, the CLEC Fire Chief and Crater Lake National Park administration about the need for improved consistency in meeting the agency’s obligation in the area of fire inspections. There is lack of agreement, however, on the best way to provide this service. According to HYT (2007), Crater Lake Engine Company should merge with its closest mutual aid partner for fire suppression services and should contract for fire prevention services (p.5). This recommendation was not adopted by CRLA administration or supported by the engine company. At the request of the NPS Regional Office, CRLA will prepare a two year plan to address program deficiencies, including inspections, before again reviewing the issue in 2009.

Program management includes a variety of positions including the Regional Structural Fire Management Specialist (Authority Having Jurisdiction), the Park Superintendent, Fire Chief, Division Chiefs and the Concessions Specialist. Current support for fire prevention activities appears to be high. The AHJ provides clarification and final decisions of code related questions. The Superintendent and Division Chiefs assist with funding and building access. The Concessions Specialist serves as a liaison and point of contact for access to facilities operated by the concessioner. The Crater Lake Engine Company does not have a fire prevention division. The Fire Chief would provide planning, supervision and management of the overall fire inspection program.
Prevention should be the number one strategy for fire safety at CRLA. Fire inspections are a critical component of this strategy. They are, however, also a benefit to fire suppression efforts in that they give the firefighters the opportunity to tour the facilities in their jurisdiction and complete pre-fire plans, resulting in “safer and more effective operations on the fireground.” (Vanlandingham, 2006, p.7)

Recommendations

Based on the results of the research accomplished, and new data collected, the recommendations have the potential for making lasting substantive improvements to the structural fire program by increasing safety from fires for park visitors, employees, residents and firefighters in an efficient and cost effective manner. There is significant support at the NPS and CRLA level to train personnel to become inspectors. The Fire Chief and Officers should organize and plan a fire inspection program in compliance with Department of the Interior and National Park Service directives.

Due to the size of the CLEC’s jurisdiction, it is not be necessary to train all members of the engine company to the NFPA Inspector 1 level. The researcher recommends training one of the CLEC Officers, who should be able to accomplish inspections of all occupancies on an annual basis. NFPA 1031 (NFPA, 2003) states that a Level I Fire Inspector may be someone “whose primary job responsibilities are not fire inspection” (p.A.4.1).

required training and certification, an inspection program should be implemented. Until that
time, other arrangements should be made to accomplish annual inspections, such as using the
AHJ or his designee.

Efficiency and cost containment are two primary considerations in evaluating
recommendations. The most recent inspection by HYT Corporation (HYT, 2007) cost $.07/
square foot (K. Hay personal communication, July 10, 2007). The researcher believes a viable
option for providing cost effective fire prevention services is to cost share between parks. The
NPS has found many opportunities for this type of cost savings in other service areas. There are
seven national park units in the vicinity of CRLA. By implementing a company fire inspection
program, and by sharing expertise with other parks, CRLA can not only increase cost
effectiveness by providing services in-house, but the park may even be able to recoup expenses
by providing a Fire Inspector to other national parks. These other parks would pay the
inspector’s salary and travel expenses. This arrangement would free up funds for training,
equipment or operations.

Additional research is needed to identify successful NPS compliant inspection programs,
to determine if there are program managers who can provide guidance during the
implementation of the CLEC fire inspection program. The researcher recommends that other
departments interested in implementing an engine company inspection program should contact
a larger number of fire departments in order to assemble more options and resources.

The NPS, park visitors, employees, residents and the firefighters of the engine company
will all benefit from a fire inspection program. Safety will be enhanced, suppression training
and operations will be improved and other parks could benefit as well.
References


Developing a Fire Inspection Program


Appendix A

Table 1

Typical Fire Inspection Report Format

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Date of inspection</td>
</tr>
<tr>
<td>2.</td>
<td>Name of inspector</td>
</tr>
<tr>
<td>3.</td>
<td>Name and address of property, noting the name and title of the person interviewed, and phone numbers</td>
</tr>
<tr>
<td>4.</td>
<td>Name and address of owner</td>
</tr>
<tr>
<td>5.</td>
<td>Names of tenants of a multiple occupancy building</td>
</tr>
<tr>
<td>6.</td>
<td>Type of occupancy</td>
</tr>
<tr>
<td>7.</td>
<td>Dimensions of buildings, including height and construction type</td>
</tr>
<tr>
<td>8.</td>
<td>Factors that could contribute to fire spread inside buildings.</td>
</tr>
<tr>
<td>10.</td>
<td>Special fire hazards</td>
</tr>
<tr>
<td>11.</td>
<td>Extinguishing, detection, and alarm equipment</td>
</tr>
<tr>
<td>12.</td>
<td>Employee fire safety organization</td>
</tr>
<tr>
<td>13.</td>
<td>Adequacy and accessibility of exits</td>
</tr>
<tr>
<td>14.</td>
<td>Exposures, including factors making fire spread possible between buildings</td>
</tr>
<tr>
<td>15.</td>
<td>Recommendations or notations of violations</td>
</tr>
</tbody>
</table>

### Table 2

*Training and Certifications Required by the NPS*

<table>
<thead>
<tr>
<th>Regional Structural Fire Mgmt. Officer</th>
<th>Prerequisite Experience or equivalent</th>
<th>Required Education</th>
<th>Required Fire Inspection Training to be accomplished within 2 years of Entrance on Duty (EOD)</th>
<th>Recommended Fire Inspection Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NFA Plans Review for Inspectors</td>
<td>NFA Fire Inspector III</td>
<td>NFA Management of Fire Prevention Programs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NFA Fire Inspection Principles</td>
<td></td>
<td>NFPA Plans Reviewer II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NFA Structures and Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NFA Performance-Based Design</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Park Fire Prevention Officer</th>
<th>Prerequisite Experience or equivalent</th>
<th>Required Fire Inspection Training to be accomplished within 2 years of Entrance on Duty (EOD)</th>
<th>Recommended Fire Inspection Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NFPA Fire Inspector II</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NFA Management of Fire Prevention Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role</td>
<td>Training Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park Fire Inspector</td>
<td>NFPA Public Fire and Life Safety Educator I, II &amp; III</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required Fire Inspection</td>
<td>NFPA Fire Inspector I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training to be accomplished</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within 2 years of EOD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended Fire Inspection</td>
<td>NFA Plans Review for Inspectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td>NFPA Life Safety Code Seminar</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NFPA Automatic Sprinkler System Seminar</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NFPA National Fire Alarm Code</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NFPA National Electrical Code Seminar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine Company Officer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required Fire Inspection</td>
<td>NFPA Fire Inspector I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training to be accomplished</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within 2 years of EOD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>on Duty (EOD)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: From “Structural Fire Management” (NPS RM – 58), (2004), pp 84-87, Washington, DC:*

Author
Appendix C

Telephone Interview Form

Date:

Time:

Introduction: Good Morning, my name is Jack Northcutt, I’m a Captain with the Engine Company at Crater Lake National Park. Our park was recently audited and one of the findings was the lack of a fire inspection program. I am writing an applied research paper on the topic of Developing an Engine Company Fire Inspection Program as part of a class in the Executive Fire Officer Program at the National Fire Academy. Thank you for agreeing to this interview.

1. Who performs fire prevention inspections in your organization?

2. What qualifications and/or certifications does the individual have?

3. How frequently are inspections performed?

4. Which occupancies are inspected?

This concludes the interview. I appreciate your time today. Is there anything that you would like to add? Do you have any questions for me?

Thank you.