

STATE FIRE MARSHAL

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MESSAGE FROM THE CHIEF

Even though the weather appears to be reluctant to change, we will soon have warmer temperatures and look forward to celebrating our nation's holiday on July 4th. Communities throughout California celebrate our country's independence with parades and grand pyrotechnic displays. Many of these communities permit the sales and use of safe and sane fireworks to celebrate, and unfortunately, many will see an increase in illegal fireworks that threaten their homes and landscapes. And a note of caution that even legal fireworks can be deemed illegal if used in local areas where their use is restricted.

According to the National Fire Protection Association, the usage and risks of fireworks are primarily concentrated around the 4th of July holiday celebrations. Nationally, roughly half (48%) of all reported fireworks fires occur during the week of the 4th of July and approximately two-thirds (64%) occur within the two to three weeks before and after the fourth of July. Data reported and gathered from the California All Incident Reporting System (CAIRS) from 2007 – 2010 indicates that fireworks were the cause of 1,852 of the reported incidents. From 2007 – 2010, seventy-six percent of the fireworks incidents happened between July 1 to July 5; for a total of 1196 incidents. Fireworks account for approximately \$6.4 million dollars in total losses, six civilian injuries, and four firefighter injuries. We know there are many unreported incidents and injuries that were not attended to by fire departments; or were handled by the local medical care facilities and therefore not reported. However, those incidents would have the same effect and potential long term trauma and physical/emotional scars.

Injuries and property loss are not the only issues associated with illegal fireworks. Every year the State is challenged with the disposal of thousands of pounds of fireworks seized by local jurisdictions. The pick up, storage, sorting, and disposal of these products are costly. Cost recovery is difficult and dependent on a myriad of criteria/situations; oftentimes the illegal fireworks are simply "dropped off" or abandoned so there is no one to charge or apply fines. Strict rules/regulations govern a disposal operation, and the product is not only under the jurisdiction of the SFM but is also bound by the laws of other state and federal agencies. We, the CAL FIRE – Office of the State Fire Marshal remain committed and diligent to resolve and mitigate fireworks disposal; and to assist the fire service with the challenges they face.

We need not lose sight of the celebration and historical pride as we approach the 4th of July holiday. Our wish for all is that we are not unduly impacted by fireworks incidents and that our communities are safe. It is our responsibility to be proactive, provide training/education, and be good examples in the use and disposal of all fireworks. May your celebration be safe and free of fire and injuries! On our website you will find an information list of approved safe and sane products. Go to http://osfm.fire.ca.gov/strucfireengineer/strucfireengineer_fireworks.php

Be safe!

TONYA L. HOOVER
Acting State Fire Marshal



Acting State Fire Marshal
Tonya L. Hoover

PIPELINE SAFETY

Protecting Steel Pipelines From Corrosion

The majority of hazardous liquid pipelines (those that transport crude oil, gasoline, diesel, jet fuel, etc.) are constructed of steel. There are two types of corrosion (which is a natural process commonly known as rust) in pipelines: external corrosion (on the outside of the pipe) and internal corrosion (inside the pipe); and primarily caused by “current flow” – electrons leaving the steel. Stopping this flow of electrons with proper protection, will allow steel pipelines to maintain their chemical properties and last indefinitely. In addition, as iron accounts for the majority of the composition of a steel pipeline it has a tendency to be consumed if exposed to a soil environment.

The two primary methods used to protect pipelines from corroding are insulating coatings and cathodic protection. The external coating protects the outside of the pipe in order to slow down the rate of corrosion. However, it is impossible to completely stop corrosion; as coatings degrade, moisture attaches to the steel which starts the corrosion process. Excavation damage to pipelines also causes the coating to be damaged allowing moisture into the steel. In pipelines, this degradation can lead to failure of the pipeline and could ultimately damage the environment, and result in loss of life and property.

The cathodic protection method essentially keeps the flow of electrons moving towards the pipe so there is limited metal loss and is achieved in two ways:

- Sacrificial anode - a metal (typically magnesium) that is attached to the steel and essentially corrodes itself rather than the steel pipe.
- Impressed current - uses a rectifier (or transformer) that converts alternating current to direct current which then impresses a current onto the pipeline. Anodes are also used in this method, but the anodes are connected to the positive terminal of the rectifier and the negative terminal of the rectifier is connected to the pipe.

Internal corrosion of pipelines is normally found in low spots along the pipeline where contaminants are prone to collect and in “dead legs” (areas in the pipeline that remain static from lack of flow). Regular cleaning with pigs and the use of inhibitors can keep internal corrosion from accelerating.

The Federal Pipeline and Hazardous Materials Safety Administration (PHMSA) reported 60 serious nationwide incidents involving corrosion between 1991 and 2010. Forty-nine of these were due to external corrosion. A total of 25 fatalities and 89 injuries with property damage exceeded \$57,000,000 occurred during this 20-year period.

FIRE ENGINEERING

Certified Unified Program Agency (CUPA)

A unified hazardous waste and hazardous materials management regulatory program (Unified Program) was established by the California Environmental Protection Agency (Cal EPA) as required by Health and Safety Code, Section 25100 et seq. The Unified Program consolidates, coordinates, and makes consistent portions of the following six existing programs:

- Hazardous Waste Generators and Hazardous Waste Onsite Treatment (Tiered Permitting)
- Underground Storage Tanks
- Hazardous Materials Release Response Plans and Inventories (Hazardous Materials Business Plan)
- California Accidental Release Prevention
- Aboveground Petroleum Storage Act
- Fire Code Hazardous Materials Management Plans and Inventories

The local Certified Unified Program Agency (CUPA) is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements within the county. Most CUPAs have been established as a function of a local city or county environmental health or fire department.

The State Fire Marshal (SFM) participates in all levels of the CUPA program, including regulatory oversight, CUPA certifications, evaluations, and training and education. For more information regarding the CUPA Program, please log on to our Web site at:

<http://osfm.fire.ca.gov/cupa/cupa.php>

WILDLAND FIRE ENGINEERING

What is the Wildland Fire Prevention Engineering Program?

Fire prevention engineering processes reduce or eliminate fire hazards and risks, and change the environment by removing or reducing the heat source, modifying or reducing the fuels (this is where our defensible space program resides), and modifying the act or omission allowing the heat source to contact ignitable fuels.

The proper application of civil, mechanical, electrical, chemical and industrial engineering techniques can reduce the number of ignitions caused by hazardous conditions or operations. Also, fire prevention engineering combines ignition management and fire hazard and risk reduction through fuel modification, vegetation management and hazard reduction activities carried out by unit fire prevention staff, Vegetation Management Program staff, and fire control personnel. Each CAL FIRE Unit's annual fire prevention plan includes procedures for addressing issues specific to that Unit.

Following are two of the areas our Wildland Fire Prevention Engineering Program focuses on along with updates for these program components:

The Defensible Space Program

The CAL FIRE defensible space inspection program has been in effect for over 60 years with CAL FIRE Units performing these inspections on an annual basis. Public Resources Code (PRC) 4291, which gives CAL FIRE the authority to perform these inspections, was originally intended to provide a way of helping the fire service prevent fires from moving from a structure into the wildland. Over the years, as more and more people moved into the wildland areas of California the fire service found they had an increasing need to provide structure protection during wildland fires. It was at this juncture that the term "defensible space" was created and the intent of the inspections changed. The focus changed to helping to ensure that structures in the wildland areas had sufficient clearance for firefighters to be able to safely protect them from an oncoming wildland fire. In recent years the intent has expanded even more to include the expectation that the hazard reduction work done to comply with PRC 4291 will help ensure that structures which exist in or are adjacent to the wildland areas of California have the best possible chances of survivability when confronted with wildfire.

A defensible space inspection program is one component within each CAL FIRE Unit's Annual Fire Prevention Plan. Since there are an estimated 780,000 homes in the SRA in California personal contact with each homeowner on an annual basis is not possible. Every year each Unit identifies the areas that present the most significant need for defensible space education and inspections and focus their inspection efforts in these areas. Because of the importance of the information regarding the home owners responsibility in creating defensible space and because there are such a large number of homes in the SRA of California a diversified approach to educating the homeowners who live there is critical. Partnerships with organizations such as Cal Chiefs, local fire safe councils, cooperating fire agencies, homeowners associations, and the insurance industry can help leverage the efforts of all concerned parties in educating as many residents as possible.

This year CAL FIRE has been working with the State Board of Forestry and Fire Protection on revisions and updates for the Property Inspection Guide and the Title 14 regulation regarding defensible space – Section 1299. Additionally the form used for conducting the defensible space inspections has also been updated to provide a better educational tool for homeowners.

The Wildland Fire Prevention Engineering Field Guides

The Wildland Fire Prevention Engineering Program has been working all year on revisions and updates to the Fire Prevention Field Guides. All but one guide – the Powerline Fire Prevention Field Guide – have not been updated for at least 10 years. There are five guides managed by the program:

- Industrial Operations Fire Prevention Field Guide
- Power Line Fire Prevention Field Guide
- Property Inspection Guide
- Railroad Fire Prevention Field Guide
- Structural Fire Prevention Field Guide

WILDLAND FIRE ENGINEERING (CONTINUED)

The draft of the Property Inspection Guide is complete and under review by the State Board of Forestry and Fire Protection, Resource Protection Committee. The revisions for the Railroad Fire Prevention Field Guide and the Industrial Operations Fire Prevention Field Guide are underway with a projected completion for the drafts of sometime this fall. The Powerline Fire Prevention Field Guide was updated and revised in 2008 and will be the forth to be reviewed and revised. The projected completion for the draft is February 2012. Lastly, the Structural Fire Prevention Field Guide will most likely be combined with the Fire Hazard Zoning Field Guide. The work on revision for the content in the two guides is projected to be completed by July 2012.

These projects and programs are part of the foundation of CAL FIRE's fire prevention program and ensuring that they are up to date and accurate helps to ensure the success of that program.

PLANNING AND RISK ANALYSIS

West Wide Risk Assessment Program Continuing

Wildfire risk in the Western United States is increasing and becoming a more complex challenge. There is much to be gained by coordinated assessment, planning and response. The West Wide Risk Assessment (WWA) is an analysis that is examining wildfire risk on all lands across 17 western states, including California that uses consistent data and methods. It utilizes one standard method to model wildfire threat, values at risk (called "fire effects"), and wildfire risk to these values, including communities.

The WWA also will serve as a regional policy analysis tool that provides results that are comparable across the west. It is identified in Phase II of the Cohesive Wildfire Management Strategy (<http://www.forestsandrangelands.gov/>) as one key source of information to help identify strategies that reduce wildfire risks and costs in the west.

The study is being completed at a scale compatible with state and community use – much finer than current national efforts. The study is progressing rapidly at this point, with final results due out by the end of the November, 2011.

In March 2011, WWA technical staff provided a briefing paper and presentation to 13 western state representatives and technical staff that provided fuels information to the WWA. Also in March, the WWA project team gave a progress report to the Western State Fire Managers at their annual meeting in Scottsdale, Arizona. They were provided an updated project schedule; status of the data acquisition for fire occurrence, weather and fuels; and an update on the decisions about how to characterize values at risk. Several novel ways to depict these values have been developed as part of the project. These include new data to show wildland development areas (wildland urban interface) and important forest assets (key forest assets classified according to fire susceptibility).

With the help of CAL FIRE – Office of the State Fire Marshal staff, data also has been developed for riparian forest areas as a proxy to show forest values related to water quality, water quantity, and other ecological functions. Values are derived based on key riparian area characteristics: rainfall, slope, soil erosion potential, and riparian vegetation life form.

More information on the WWA can be found at the project website at: <http://www.westwideriskassessment.com/>. An update for May 2011 is found at http://www.westwideriskassessment.com/status/WWA%20Status%20Report%20-May-2011_5_8.pdf