Federal Fire Working Group Meeting
(Hosted by ATF Fire Research Laboratory)
Federal Emergency Management Agency/U.S. Fire Administration
16825 South Seton Avenue, Emmitsburg, Maryland 21727
June 7, 2018; Time: 9:315 a.m. – 12:30 a.m.
Call in#: 1-800-320-4330; PIN#: 243843

ATTENDEES
Brian Grove      ATF
Jiann C. Yang    NIST
Tony Putori      NIST
Rik Khanna       CPSC
Scott Ayers      CPSC
Gerald Schumann  NASA
Carl Glover      NAVY
Jeremy West      DOI
Michael G. Abraham ATF
Ricky Brockman   NAVY

CALLED IN
Everett Hinkley (presenter)    USFS
John Staub (presenter)    Dept. of Army
John Carnegis      NFA
Peter Larrimer      VA
Jason Scott        NASA
John Meehan        FAA
Michael Pritchard  USMC

PRESENTERS/ATTENDEES
Mark Henry Salley    USNRC
Nicholas Melly       USNRC
Gabriel Taylor      USNRC
Kenneth Hamburger   USNRC
Brian Metzger        USNRC
Barb Geringer       Forest Service
Rohit (Rik) Khanna   CPSC
Larry McKenna        USMC

USFA ATTENDEES
Mr. Keith Bryant    U. S. Fire Administrator
Rick Patrick       National Fire Programs
                   Director/USFA
Sandy Facinolini   Chief, Prevention & Information
                   Branch, National Fire Programs
                   Division/USFA
Bruce Bouch Fire Program Specialist, Prevention & Information Branch /USFA
Rebecca Ryan Fire Program Specialist, Prevention & Information Branch, National Fire Programs Division /USFA

Opening

Ms. Ryan welcomed everyone to the FFWG meeting and thanked Mr. Brian Grove, ATF Fire Research Laboratory, for hosting the meeting. Ms. Ryan introduced the USFA Administrator, G. Keith Bryant, and he welcomed the group and spoke about his interest in attending and looking forward to the various presentations.

The following presentations were provided:

**John Staub, Chief**  
**Army Fire & Emergency Services**  
**Office of the Asst. Chief of Installation Mgmt.**  
**DOA/Pentagon**  
**Presentation:** National Level Challenges Facing Army Fire & Emergency Services

Mr. John Staub, Chief, Army Fire & Emergency Services, presented a short briefing on several national level issues that impact not only the Army, but potentially any federal agency with OPM GS-0081-series employees. Following an overview of Army demographics, the presentation covered:

1. The challenges associated with participating in cascading mutual aid agreements.  
   42 USC 1856 uses very restrictive language that essentially ties an agency head to entering into reciprocal aid agreements with departments “in the vicinity of federal property.” While the Army is considering a legislative change to open up the language, the question was how other federal agencies that fall under this law enter into cascading mutual aid agreements.

2. 5 CFR 229 drive OPM Occupational Health exams and surveys that are more restrictive than those contained in NFPA 1582. OPM considers many of the guidelines in 1582 to be preventive health oriented and fall under the category of purview of one’s personal healthcare provide and not the federal government.

3. 42 USC 5165 (f) prohibits federal employees from participating in FEMA task forces as members of the task force. This places considerable constraints on federal firefighters participating with mutual aid agencies, and seems to restrict becoming real community partners.

4. OPM qualification standards for GS-0081-series employees. The Department of Defense (DoD) intends to open the OPM qualification standard for firefighters and add positive academic requirements as one progresses through the ranks. While there is no law that requires academic degrees for firefighters, the DoD team has been working to identify executive and leadership competencies, measure gaps in the program, and use the FESHE model as a way to satisfy the gaps.

All are encouraged to contact Mr. Staub with comments, questions and suggestions.
Everett Hinkley  
**National Remote Sensing Program Mgr.**  
**U.S. Forest Service**  
**Presentation:** *Update on Wildland Fire Remote Sensing Support: Where is Earth Imaging Taking Us?*

Mr. Hinkley provided an update on 2017 fire season (statistics) and current capabilities for remote sensing support to wildland fires. It was noted that in 2017, 10.03 million acres burned which was 153% of the ten-year average (2007-2016). Mr. Hinkley also shared that the busiest night in 2017 was September 1, 2017, in which they had 48 fires. Everett also noted that there was an unprecedented demand in 2017 and that planes are getting old.

Everett also noted that there are two remote sensing working groups. The first, TFRSAC (Tactical Fire Remote Sensing Advisory Committee), meets biannually and includes representatives from federal and state agencies, academic institutions, international partners, and the vendor community. This is a broad collaborative forum for advancing and enabling the development and delivery of remote sensing platforms, sensors and decision support tools to the wildland fire community. Their focus is largely unclassified.

The second working group, TWG (Thermal Working Group), is the coordinating body for advancing and enabling the development and delivery of data, information or products derived from classified thermal remote sensing platforms to civil users. Their focus is largely classified.

Mr. Hinkley states that The Forest Service continues to look at leading edge technologies which provide accurate, actionable information to the first responder and incident command communities.

Mark Henry Salley, P.E.  
Nicholas Melly, FPE  
Gabriel Taylor, P.E.  
Kenneth Hamburger  
**Fire Research & External Hazards Analysis Branch**  
**U.S. Nuclear Regulatory Commission**  
**Presentation:** *The NRC High Energy Arching Fault (HEAF) Research Update: Summer 2018*

High-energy arcing faults (HEAFs) are extended-duration arc flash events that can occur in electrical enclosures and bus ducts, causing extensive damage. Such arcing faults can produce molten metal, pressure waves, projectiles, and temperature in excess of 35,000 degrees Fahrenheit. HEAF events can be significant contributors to nuclear power plants’ fire core damage frequency (the typical measure of plant risk); however, they are not unique to the nuclear industry, and can occur in a variety of industrial and commercial facilities.

Recent research conducted by the NRC indicates that the methods used to model the damage from a HEAF may not be bounding. As part of an international safety
consortium, the NRC carried out 26 full-scale HEAF experiments at a high-energy test laboratory between 2014 and 2016. In two of the tests where aluminum was present, either in the conductor or housing, damage far exceeded that which the existing models would predict. Accordingly, the NRC issued an information notice to licensees to alert them of the potential hazard, and submitted the issue to the agency’s Generic Issues Program.

In order to resolve the Generic Issue and revise the models to accurately reflect the HEAF phenomenon, more testing is needed. The NRC is in the planning stages of a second set of international, large-scale tests, and a small-scale test program to further study the issue. Draft test plans were published in the Federal Register for public comment, and a workshop was held in April, 2018 to further solicit input from industry partners and interested stakeholders. The NRC plans to begin testing in the third quarter of 2018.

**Brian Metzger, FPE**  
**Office of Nuclear Reactor Regulation**  
**U.S. Nuclear Regulatory Commission**  
**Presentation:** Performance-Based Fire Protection at the NRC

The purpose of Mr. Metzger’s presentation was to provide a glimpse into how the NRC utilizes fire testing and event data to develop the risk models that inform regulatory decisions. It was noted that the NRC uses fire risk insights as part of its performance-based licensing framework per NFPA 805 and while retaining safety margin and defense-in-depth. The presentation included a brief history of fire protection and probabilistic risk assessment (PRA) in the nuclear industry followed by an overview of the process used to develop a fire PRA model.

The intent was to highlight how various disciplines and sources of information and data come together to form a basis for assessing regulatory matters. Another key point was to emphasize how important the quality of the data used in probabilistic risk models is for ensuring that decisions are properly informed.

**Barb Geringer, Emergency Management Specialist**  
**All-Hazard & International Fire Support**  
**U.S. Forest Service**  
**Presentation:** 2018 Fire Year Preview

Ms. Geringer began her presentation by providing information on 2017 which was an historic wildfire year. Some indicators were:

- Dozens of lives lost, including 14 firefighters
- $2.9 billion federal dollars spent
- 10 million acres burned
- 12,300 structures were lost
- At peak response, more than 28,000 responders were mobilized
- Year-round fires

Currently, a persisting and expanding drought exists in huge portions of the western U.S. and the outlook through the end of August shows slight improvement only in the Central
Plains. Lack of significant snowpack in the west, carryover of cured fuels in addition to this year’s growth, and warmer and drier than average conditions suggest significant wildfire potential across at least a dozen western states through at least September.

2018 has already seen 1.5 million acres burned. Ms. Geringer stated they will continue to use lessons learned going forward. Available resources for 2018 include: 15,000+ federal firefighters, 1,500 engines, 25 USFS air tankers, 200 USFS helicopters, and military aviation resources as needed. In addition, contract crews and equipment will be available.

Ms. Geringer advised that their work goes beyond wildfire response: it’s about improving the condition of forests. They need to get a lot more work done through active management, and the tools given to them in the omnibus will help them do that. By 2020, the fire funding fix will stabilize their operations for work on the ground and dramatically reduce the risk of fund transfer.

- This allows them to carry out the forest condition improvements that prevent catastrophic wildfires from threatening lives, homes, and communities in the first place.

These new authorities give the forest service tools to increase work on the ground, and they are positioning to use them now. With its authorities they are:

- Targeting fuels reduction priorities to areas that are most at need
- Reviewing and expanding existing Good Neighbor Agreements nationally
- Preparing national tools that target where the new Categorical Exclusion to reduce wildland fuels can be used
- Identifying areas where the use of a 20 year stewardship authority could bring stability and investment opportunities for local forest products infrastructure

Barb mentioned they are implementing a national wildfire risk strategy that targets their fuels capacity to thin forests and reduce wildland fuel in areas most in need. Coupled with the expanded authorities that have been have approved, these reforms will translate to more results, production and work in our nation’s forests.

**Improving Efficiency with Technology**

Technology, especially UAS or drone technology, helps fire managers get better data to manage fires faster, cheaper, and safer than ever.

- UAS deliver real-time data which improves our ability to keep firefighters safe and communities and resources protected. A great example of that is the North Umpqua Fire in Oregon in 2017 when a drone operator wrapping up a recon flight noticed an undetected hotspot. They were able to contain the hotspot right away and prevent more than $50 million in resource and property damages.
- Integrating drone operations can be as simple as retrofitting existing helicopters to fly with or without a pilot. After a pilot wraps up for the day they can extend operations through the night for 24 hour support. This is a significant improvement. Nighttime firefighting capability could potentially reduce the time to contain the fire, while endangering no human lives.
- DOI manages a fleet of 393 drone aircraft operated by 309 pilots with 80 Fire qualified remote pilots, and now 4 call-when-needed wildland fire vendors on
contract with 5 different drone airframes. This means that there are aircraft and pilots available to support wildfire activities across the country.

- Fire service is constantly looking at new technologies including communications and alert systems that improve firefighter safety. Coordinating with DOD, they are looking at more advanced command and control systems that provide cost effective monitoring and planning support for fire operations.

Barb also mentioned that partnerships bring collaboration with Federal partners, states and local governments, Tribes, and other stakeholders to significantly reduce fire risk to wildland firefighters, communities, and landscapes.

- Planning, active management, and coordinated operations are cornerstones of wildland fire management partnerships
- Partnerships are key to DOI’s land stewardship responsibilities, including the application of fuels management work that helps reduce fire risk; post-fire rehabilitation work that helps restore landscapes and watersheds; and data management and decision support systems that provide information needed for fire practitioners and decision makers
- A great example of the types of collaboration that partnerships provide are data and decision support networks, such as FireNet that serve to coordinate and leverage activities across the entire Wildland Fire Community
- States, Tribes, and Federal Agencies are coordinating in the development and use of geospatial data to help inform wildfire risk. Shared data and mapping makes it easier for resource managers and communities to improve coordination and make more informed on-the-ground decisions that span multiple jurisdictions and boundaries

The Forest Service works in partnership with national, regional, state, tribal, and local government and non-government organizations to achieve cross-boundary wildfire risk reduction (other land management).

- 136 Good Neighbor agreements have been established in 33 states and in at least 62 national forests.
- The Joint Chiefs’ Landscape Restoration Partnership (JCLRP) aims to reduce wildfire threats to communities and landowners, protect water quality and supply, and improve wildlife habitat for at-risk species. Since the inception of the JCLRP in 2014, the 56 projects span 38 different states and Puerto Rico. In FY2018, $2.9 million to fund seven new projects and $29 million to support 21 ongoing partnership projects. Since 2014, over 300,000 acres of National Forest System lands were treated for hazardous fuels, 29,000 acres of watershed restored and over 200,000 acres of wildlife habitat improved.
- Continue to support the continuation of a partnership with The Nature Conservancy (TNC) that supports the Fire Adapted Communities Learning Network (FAC Network), Fire Learning Network (FLN) and Prescribed Fire Training Exchange (TREX) and Indigenous Peoples Burning Network (IPBN). These initiatives support organizations in 15 states and encompass over 70 million acres. The networks and collaboration with local and national partners facilitated by these networks enable the members and other partners and stakeholders to learn, plan, implement, monitor and adapt together to share knowledge among communities and landscapes.
• The FS Wildland Fire Air Quality Response Program has expanded partnerships with many non-traditional partners in the air regulatory and public health arenas through the Air Resource Advisor smoke messaging on wildfires, as well as in the actual cadre of trained ARAs which include EPA, state, tribal and local health and air quality regulatory agencies.
• Developed a new partnership with COCO (Coalitions and Collaboratives, Denver, Colorado) Mitigation Action and Implementation Network (MAIN) focused on helping communities increase mitigation on the ground.

Larry McKenna, Fire Program Specialist
National Fire Data Center
U.S. Fire Administration
Presentation: DC Hotstick

Dr. McKenna’s show ‘n’ tell presentation focused on a tool that has been in the hands of first responders for years. It is a relatively simple tool to use to assess the presence of AC voltage in a wire or conductive material. However it does not work for Direct Current (DC) due to significant differences in the physics involved.

Larry explained that a growing potential hazard exists and the physics of DC require a vastly different approach to detection. DC detectors exist, but are so bulky and unreliable that they are unsuitable for field use. Dr. McKenna further explained that electric field strength around a wire with DC drops to near zero in distances less than typical insulation thicknesses. A contact method is required with current sensing technology. Assurance of contact to prevent dangerous false negatives is required.

USFA, working closely with Oak Ridge National Laboratories, developed a prototype DC Hotstick for use by first responders. Based on a digital voltmeter, two key elements of this patented technology include positive confirmation of contact with the conductor being tested or the presence of DC voltage and a grounding clamp that also includes positive confirmation of contact. The prototype is presently a standalone device, but can easily be incorporated into existing AC Hotstick products to provide ease of use by first responders wearing personal protective equipment (PPE).

The patent has been licensed and development of a commercial product is currently underway.

Rohit (Rik) Khanna, Fire and Combustion Program Areas Risk Manager
U.S. Consumer Product Safety Commission
Presentation: IoT (Internet of Things) and Consumer Product Hazards

Consumer products that have a connection to the Internet and can transmit or receive data, upload or download operating software or firmware, or can communicate with other Internet-connected devices, are the Internet of Things (IoT). Mr. Khanna explained that the Internet of Things holds great promise for improving consumer safety such as detection of hazards (distributed sensors, always listening, video comparison, etc.),
notification of hazards (alerts on smartphones, interconnected alarms w/ flashing lights, etc.), and recall effectiveness.

Mr. Khanna stated that the three main areas of concern with the Internet of Things for CPSC are: addition of remote operation for products that should not be operated remotely (stoves, space heaters, microwaves, etc.); changes in software that create a hazard where one did not exist before (change in sensitivity in a smoke alarm, increase in speed in something that used to travel slower, etc.); and, disabling of a safety feature (smoke alarm stops working because a software update does not load properly, doors suddenly don’t unlock and people cannot leave their homes, etc.)

Internet of Things poses unique opportunities for CPSC that include looking not at specific products as we have done in the past, but instead capabilities across a wide spectrum of products, software as a consumer product, and a consumer product that rapidly changes over time.

CPSC is taking a multi-faceted approach to addressing the emerging hazards associated with the Internet of Things:

1. development of voluntary standards (domestic and international);
2. collaborate & coordinate with other federal agencies & stakeholders;
3. collaborate & coordinate with outside stakeholders.

During the course of the meeting there was good conversation and q&a and after the presentations were concluded our host, Brian Grove, offered a tour for anyone interested.

**The next meeting will be held in the late fall/early winter of 2018 but no definitive date has been identified. The FFWG members will be notified when a timeframe has been established.**