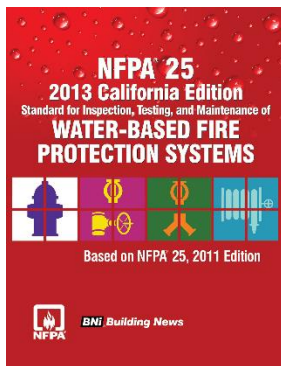




## CAL FIRE – Office of the State Fire Marshal Information Bulletin 18-011

Issued: December 20, 2018

### NFPA 25, 2011 Edition Tentative Interim Amendments, TIA 11-5 for the 2013 California Edition



The purpose of this Information Bulletin is to eliminate the need to open energized electric fire pump controller panels. The problem is the probability of an arc flashes occurring during the Inspection, Testing, and Maintenance of Electric Fire Pumps.

Labels warning of the hazard of arc flashes have been found to be virtually nonexistent for current fire pump installations and the conventional Personal Protective Equipment (PPE) issued to inspectors is not adequate to protect against the hazards posed by arc flashes. Arc flashes can produce temperatures as high as 35,000 Degrees Fahrenheit and blast pressures exceeding 2,000 lb/ft<sup>2</sup>.

Inspectors are encouraged not to open energized electric fire pump controller panels.

Based on the safety hazards identified in TIA 11-5 for NFPA 25, 2011 Edition, the Office of the State Fire Marshal is recommending adherence to the changes proposed by the National Technical Committee. These revisions and safety concerns will be addressed in future code adoption processes.

The following are the revisions to NFPA 25, 2011 Edition and are recommended to be followed for the 2013 California Edition (shown with cross out and under line):

**Note: References 1 and 2 of the National TIA are not Applicable in California.**

**A.4.8.6 WARNING:** NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, includes electrical requirements that discourage the installation of a disconnect means and limit overcurrent protection in the power supply to electric motor-driven fire pumps. This is intended to ensure the availability of power to the fire pumps. Where equipment connected to those circuits is serviced or maintained, the service person could be subject to unusual exposure to electrical and other hazards. It could be necessary to establish special safe work practices and to...

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use safeguards or personal protective clothing, or both. The required category of personal protective equipment will vary dependent upon the specific installation details and associated incident energy levels. The determination of such incident energy levels can be established by conducting an incident energy level analysis as provided in Annex D of NFPA 70E or by utilization of the PPE category method provided by NFPA 70E, Table 130.7(C)(9), where applicable. Use of the PPE category method requires that the maximum available short-circuit current and maximum fault clearing time for the actual installation do not exceed those indicated in NFPA 70E, Table 130.7(C)(9). See also NFPA 70E for additional safety guidance regarding the determination of the incident energy and the required level of personal protective equipment. The provisions of NFPA 70E require that the owner label the equipment with information regarding the electrical hazards associated with the installation. Where such labeling is not present, the technician cannot make a determination for safe work practice on the equipment without further assessment of the incident energy associated with the installation.

3. *Revise the Electrical System section of Table 8.1.2 and add a note to the end of the Table to read as follows:*

**Table 8.1.2 Alternative Fire Pump Inspection, Testing, and Maintenance Procedures**

<u>Frequency</u>	<u>Complete as Applicable</u>	<u>Visual Inspection</u>	<u>Check</u>	<u>Change</u>	<u>Clean</u>	<u>Test</u>
...						
<b>Electrical System</b>						
...						
<del>Tighten electrical connections as necessary</del>						X
<del>Annually</del>						
Lubricate mechanical moving parts (excluding Annually starters and relays)						X
Calibrate pressure switch settings <sup>†</sup>			X			Annually
Grease motor bearings				X		Annually
<del>Voltmeter and ammeter for accuracy (5%)</del>				X		<del>Annually</del>
Any corrosion on printed circuit boards	X					Annually
Any cracked cable/wire insulation <sup>†</sup>	X					Annually
Any leaks in plumbing parts <sup>†</sup>	X					Annually
Any signs of water on electrical parts <sup>†</sup>	X					Annually
...						

\*Required only where the conduct of such work can be completed without the opening of an energized electric motor– driven fire pump controller.

4. *Revise 8.3.3.2(2)(a) to read as follows:*

**8.3.3.2** The pertinent visual observations, measurements, and adjustments specified in the following checklists shall be conducted annually while the pump is running and flowing water under the specified output condition:

...

(2) At each flow condition as follows:

- (a) ~~Where external means is provided on the controller, r~~Record the electric motor voltage and current (all lines) (b) Record the pump speed in rpm
- (c) Record the simultaneous (approximately) readings of pump suction and discharge pressures and pump discharge flow

5. *Add a new 8.3.3.5.1 and associated Annex material to read as follows:*

**8.3.3.5.1\*** Alarm sensors located within electric motor–driven fire pump controllers that cannot be accessed without opening an energized electric motor–driven fire pump controller shall be tested at an alternative location outside of the controller.

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**A.8.3.3.5.1** Testing at an alternative location can include completion of a test at an external fire alarm monitor module used to monitor the sensors within the fire pump controller.

6. Revise 8.3.3.6 and associated Annex material to read as follows:

**8.3.3.6\* Safety.** ~~Sub~~Section 4.8.6 shall be followed for safety requirements while working near electric motor-driven fire pumps. At a minimum, the provisions of NFPA 70E<sup>®</sup>, Standard for the Electrical Safety in the Workplace<sup>®</sup>, or equivalent shall be applied.

**A.8.3.3.6** See also ~~NFPA 70E~~ for additional safety guidance A.4.8.6.

7. Revise 8.3.5.5 and 8.3.5.6 to read as follows:

**8.3.5.5** ~~Where measured, c~~Current and voltage readings whose product does not exceed the product of the rated voltage and rated full-load current multiplied by the permitted motor service factor shall be considered acceptable.

**8.3.5.6** ~~Where measured, v~~Voltage readings at the motor within 5 percent below or 10 percent above the rated (i.e., nameplate) voltage shall be considered acceptable.

Please contact the Fire Engineering & Investigations division if you have any further questions at [AES@fire.ca.gov](mailto:AES@fire.ca.gov).

For more information please visit our website <http://osfm.fire.ca.gov>