Public Comment No. 34-NFPA 30A-2022 [Global Input]

Global FR 31

Delete entire sentence for 1.1.6

Revise 1.2* to read: **1.2* Purpose. The purpose of this document shall be to provide reasonable safeguards for dispensing liquid and gaseous motor fuels into the fuel tanks of automotive vehicles and marine craft. delete sentence:** *and charging the battery or other energy storage device for an electric vehicle where located on a motor fuel dispensing facility.*

Delete sections/titles for: 3.3.7*, A3.3.7, 3.3.8, 3.3.9, 3.3.10, 3.3.11, 3.3.17, 3.3.21

Revise Chapter 15 to read: **Chapter 15 Electric Vehicle Power Transfer Systems**

Revise 15.1 Scope. 15.1 Scope. This Chapter shall apply where electric vehicle power transfer systems are installed at a motor fuel dispensing facility or repair garage.

Delete: 15.2 Definitions Specific to Chapter 15

Delete: 15.2.1* Electric Vehicle (EV)

Delete: sections/titles for: A15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5 , 15.2.6

Revise 15.3 to read: 15.3 General Installations Requirements.

Revise 15.3.1 to read: 15.3.1 Electric vehicle power transfer systems shall be installed in accordance with NFPA 70 and the manufacturer's installation instructions.

Delete: 15.3.1.1, 15.3.2, 15.3.3, 15.3,3,1, 15.3.3.2

Delete: 15.3.4, 15.3.4.1*, A.15.3.4.1

Delete: 15.3.4.2

Delete: 15.3.4.3*, A.15.3.4.3

Delete: 15.4, 15.4.1, 15.4.2, 15.4.3, 15.4.4, 15.4.5

Keep: 15.5

Revise 15.5.1 to read: 15.5.1 Electric vehicle power transfer systems shall be protected against collision damage by bollards or other approved means.

Delete: 15.5.2, 15.5.3

Delete: 15.6, 15.6.1, 15.6.2

Delete: 15.7

Revise 15.8* to read: 15.8* Operation and Maintenance. Electric vehicle power transfer systems shall be operated and maintained in accordance with the manufacturer's instructions.

Keep: A.15.8

Delete: 15.8.1, 15.8.2

Delete: 15.9, 15.9.1, 15.9.2, 15.9.3, 15.9.4, 15.9.5, 15.9.6

Delete: 15.10

Delete: 15.11, 15.11.1, 15.11.2

Delete: 15.12, 15.12.1, 15.12.2

Additional Proposed Changes

File Name	Description	Approved
NFPA_30A_-_PC_to_Global_FR_31.docx	NFPA 30A GLOBAL FR 31	

Statement of Problem and Substantiation for Public Comment

This public comment simplifies and clarifies the installation, protection, operation, and maintenance of electric vehicle power transfer systems in Chapter 15 of the first draft. As outlined in our public comment to TIA No. 1621, NEMA does not believe that most of the criteria in this new Chapter have been substantiated with any cases studies or documented incidents at motor fuel dispensing facilities and repair garages where electric vehicle power transfer systems have been installed. NEMA is not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities. Furthermore, NEMA believes the criteria already found in Chapter 8 of this code and Articles 511, 514, and 625 of NFPA 70. Following is an explanation of the proposed revisions to Global First Revisions No. 31:

- The scope and purpose of this code already includes all the electrical equipment and systems that may be installed at a motor fuel dispensing facility or repair garage. There is no need to add section 1.1.6 or the additional language in 1.2.
- None of the definitions in Chapter 3 or Chapter 15 are needed as most of these terms are already defined in NFPA 70 and the applicable product safety standards associated with electric vehicle power transfer systems.
- The Chapter 15 title and scope should be revised to “electric vehicle power transfer systems” to be properly harmonized with NFPA 70 and inclusive or electric vehicle power export equipment, electric vehicle supply equipment, and wireless power transfer equipment.
- Section 15.3.1 has been revised to provide a pointer to NFPA 70 and the manufacturer’s installation instructions where the safe and proper installation criteria for electrical vehicle power transfer systems can be found.
- Section 15.5.1 replaces the terms “guard posts” with “bollards” as bollards are the typical protective method against vehicle impact and collision with electric vehicle power transfer systems.
- Section 15.8 has been expanded to both operation and maintenance of electric vehicle power transfer systems as these criteria are closely related.

NEMA recommends all the other sections of the chapter be deleted from the code as these rules are overly restrictive, discriminate against one class of electric equipment, and are not within the scope of this code. The installation and use of electric vehicle power transfer systems at motor fuel dispensing facilities or repair garages in accordance with NFPA 70 are every bit as safe as the installation and use of other electrical equipment typically associated with these facilities such as tire inflation machines, automotive vacuum machines, vending machines, and electrical ice storage coolers. This installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities or repair garages.

Related Item

- GLOBAL FR31

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 11:03:25 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with

vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part

of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these

requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

FORM FOR COMMENT ON NFPA REPORT ON PROPOSALS
All Comments Must Be Received by 5:00 pm EST/EDST on the Published Comment Closing Date

For further information on the standards-making process, please contact the Codes and Standards Administration at 617-984-7249 or visit www.nfpa.org/codes.

For technical assistance, please call NFPA at 1-800-344-3555.

FOR OFFICE USE ONLY

Log #:

Date Rec'd:

Please indicate in which format you wish to receive your ROP/ROC ☐ **electronic** ☐ **paper** ☐ **download**
(Note: If choosing the download option, you must view the ROP/ROC from our website; no copy will be sent to you.)

Date **Name** Megan Hayes **Tel. No.** [redacted]

Company National Electrical Manufacturers Association (NEMA) **Email**

Street Address [redacted] **City** [redacted] **State** [redacted] **Zip** [redacted]

******If you wish to receive a hard copy, a street address MUST be provided. Deliveries cannot be made to PO boxes.***

Please indicate organization represented (if any)

1. (a) NFPA Document Title Code for Motor Fuel Dispensing Facilities and Repair Garages **NFPA No. & Year** 30A - 2024

(b) Section/Paragraph 1.1.6, 1.2, 3.3, Chapter 15

2. Comment on Proposal No. (from ROP): Global FR 31

3. Comment Recommends (check one): ☐ new text ☒ revised text ☐ deleted text

4. Comment (include proposed new or revised wording, or identification of wording to be deleted): [Note: Proposed text should be in legislative format; i.e., use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~).]

~~1.1.6 This code shall apply to areas and equipment for the purposes of charging the battery or other energy storage device for an electric vehicle where located on a motor fuel dispensing facility.~~

1.2* Purpose. The purpose of this document shall be to provide reasonable safeguards for dispensing liquid and gaseous motor fuels into the fuel tanks of automotive vehicles and marine craft ~~and charging the battery or other energy storage device for an electric vehicle where located on a motor fuel dispensing facility~~.

~~3.3.7* Electric Vehicle (EV).~~

~~A.3.3.7 Electric Vehicle (EV).~~

~~3.3.8 Electric Vehicle Charging Station (EVCS).~~

~~3.3.9 Electric Vehicle Connector.~~

~~3.3.10 Electric Vehicle Supply Equipment.~~

~~3.3.11 Energy Storage Systems (ESS).~~

~~3.3.17 Output Cable to the Electric Vehicle.~~

~~3.3.21 Tank Vehicle.~~

Chapter 15 Electric Vehicle ~~Charging Stations~~ Power Transfer Systems

15.1 Scope. This Chapter shall apply where electric vehicle ~~charging stations (EVCS)~~ power transfer systems are installed at a motor fuel dispensing facility or repair garage.

~~15.2 Definitions Specific to Chapter 15.~~

~~15.2.1* Electric Vehicle (EV).~~

~~A15.2.1~~

~~15.2.2 Electric Vehicle Charging Station (EVCS).~~

~~15.2.3 Electric Vehicle Connector.~~

~~15.2.4 Electric Vehicle Supply Equipment (EVSE).~~

~~15.2.5 Energy Storage Systems.~~

~~15.2.6 Output Cable to the Electric Vehicle.~~

15.3 General Installation Requirements.

15.3.1 ~~Location Adjacent to Buildings or Property Lines.~~ Electric vehicle power transfer systems shall be installed in accordance with NFPA 70 and the manufacturer's installation instructions.

~~15.3.1.1~~

~~15.3.2 Location Adjacent to Storage, Handling, or Dispensing of Flammable or Combustible Liquid or Gases.~~

~~15.3.3 Location Beneath Canopies.~~

~~15.3.3.1~~

~~15.3.3.2~~

~~15.3.4 Requirements for ESS and EVSE Systems.~~

~~15.3.4.1*~~

~~A.15.3.4.1~~

~~15.3.4.2~~

~~15.3.4.3*~~

~~A.15.3.4.3~~

~~15.4 Installation Requirements.~~

~~15.4.1~~

~~15.4.2~~

~~15.4.3~~

~~15.4.4~~

~~15.4.5~~

15.5. Collison Protection.

15.5.1 ~~ESS or EVSE~~ Electric vehicle power transfer systems shall be protected against collision damage by ~~guard posts~~ bollards or other approved means.

~~15.5.2~~

~~15.5.3~~

~~15.6 Maneuvering on Site.~~

~~15.6.1~~

~~15.6.2~~

~~15.7 Signage.~~

15.8* Operation and Maintenance. ~~EVSE~~ Electric vehicle power transfer systems shall be operated and maintained in accordance with the manufacturer's instructions.

A.15.8 See Chapter 34 of NFPA 70B for additional guidance.

~~15.8.1~~

~~15.8.2~~

~~15.9 Emergency Electrical Disconnects.~~

~~15.9.1~~

~~15.9.2~~

~~15.9.3~~

~~15.9.4~~

~~15.9.5~~

~~15.9.6~~

~~15.10 Lighting.~~

~~15.11 Fire Extinguishers~~

~~15.11.1~~

~~15.11.2~~

~~15.12 Inspection and Maintenance.~~

~~15.12.1~~

~~15.12.2~~

5. Statement of Problem and Substantiation for Comment: (Note: State the problem that would be resolved by your recommendation; give the specific reason for your Comment, including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

This public comment simplifies and clarifies the installation, protection, operation, and maintenance of electric vehicle power transfer systems in Chapter 15 of the first draft. As outlined in our public comment to TIA No. 1621, NEMA does not believe that most of the criteria in this new Chapter have been substantiated with any cases studies or documented incidents at motor fuel dispensing facilities and repair garages where electric vehicle power transfer systems have been installed. NEMA is not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities. Furthermore, NEMA believes the criteria already found in Chapter 8 of this code and Articles 511, 514, and 625 of NFPA 70. Following is an explanation of the proposed revisions to Global First Revisions No. 31:

- The scope and purpose of this code already includes all the electrical equipment and systems that may be installed at a motor fuel dispensing facility or repair garage. There is no need to add section 1.1.6 or the additional language in 1.2.
- None of the definitions in Chapter 3 or Chapter 15 are needed as most of these terms are already defined in NFPA 70 and the applicable product safety standards associated with electric vehicle power transfer systems.
- The Chapter 15 title and scope should be revised to “electric vehicle power transfer systems” to be properly harmonized with NFPA 70 and inclusive or electric vehicle power export equipment, electric vehicle supply equipment, and wireless power transfer equipment.
- Section 15.3.1 has been revised to provide a pointer to NFPA 70 and the manufacturer’s installation instructions where the safe and proper installation criteria for electrical vehicle power transfer systems can be found.
- Section 15.5.1 replaces the terms “guard posts” with “bollards” as bollards are the typical protective method against vehicle impact and collision with electric vehicle power transfer systems.
- Section 15.8 has been expanded to both operation and maintenance of electric vehicle power transfer systems as these criteria are closely related.
- NEMA recommends all the other sections of the chapter be deleted from the code as these rules are overly restrictive, discriminate against one class of electric equipment, and are not within the scope of this code. The installation and use of electric vehicle power transfer systems at motor fuel dispensing facilities or repair garages in accordance with NFPA 70 are every bit as safe as the installation and use of other electrical equipment typically associated with these facilities such as tire inflation machines, automotive vacuum machines, vending machines, and electrical ice storage coolers. This installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities or repair garages.

6. Copyright Assignment

(a) ☐ I am the author of the text or other material (such as illustrations, graphs) proposed in the Comment.

(b) ☐ Some or all of the text or other material proposed in this Comment was not authored by me. Its source is as follows: (please identify which material and provide complete information on its source)

I hereby grant and assign to the NFPA all and full rights in copyright in this Comment and understand that I acquire no rights in any publication of NFPA in which this Comment in this or another similar or analogous form is used. Except to the extent that I do not have authority to make an assignment in materials that I have identified in (b) above, I hereby warrant that I am the author of this Comment and that I have full power and authority to enter into this assignment.

Signature (Required) _____

PLEASE USE SEPARATE FORM FOR EACH COMMENT

Mail to: Secretary, Standards Council · National Fire Protection Association
1 Batterymarch Park · Quincy, MA 02169-7471 OR
Fax to: (617) 770-3500 OR Email to: proposals_comments@nfpa.org1/11/2023

Public Comment No. 60-NFPA 30A-2022 [Global Input]

Please see the attachment for comments submitted on behalf of the National Association of Convenience Stores (NACS); NATSO, Representing America's Travel Plazas and Truckstops; and SIGMA: America's Leading Fuel Marketers.

Additional Proposed Changes

File Name	Description	Approved
NFPA_30A_-_Comments_to_Global_FR_31_NACS_NATSO_SIGMA.pdf	Please see comments attached on behalf of NACS, NATSO, and SIGMA.	

Statement of Problem and Substantiation for Public Comment

NACS, NATSO and SIGMA recognize that there is a desire by some in the fire safety community to develop a section of the code governing motor fuel sites to provide requirements for the safe installation of electric vehicle power transfer systems. It is our belief, however, that the criteria already found in Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 address many of the concerns this new section of 30A was designed to address. The revisions we support therefore would support the desire by the fire safety community to add protections for electric vehicle chargers installed at motor fuel locations by incorporating the relevant portion of NFPA 70 which already provides robust guidance for these installations. Specifically, the proposed 30A changes include property line distance requirements and distance set-back requirements from a building that do not have unique applicability to motor fuel stations.

The recommended changes in the attached document, authored by the National Electrical Manufacturers
Associations (NEMA), appropriately direct fire safety officials to the portion of the code that regulates the installation of electrical equipment while also addressing the sensitive nature of sites housing hazardous materials. NACS, NATSO and SIGMA support these changes and urges NFPA to adopt them.

Related Item

•

Submitter Information Verification

Submitter Full Name: Thereza Cevidanes

Organization:

Affiliation: Comments submitted on behalf of NACS, NATSO, and SIGMA.

Street Address:

City:

State:

Zip:

Submittal Date: Tue May 31 16:18:34 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock,

electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities", incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in

Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition,

spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

May 31, 2022

Secretary, Standards Council
National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

RE: NFPA Code 30A- 2024 Draft Modifications to the Code for Motor Fuel Dispensing Facilities and Repair Garages

Dear Standards Council Secretary:

On behalf of the country's retail fuel industry, we are writing to express support for modifications to the proposed 30A-2024 revision pertaining to NFPA Code 30A, Sections 1.1.6, 1.2, 3.3 and Chapter 15. The collective membership of NACS, NATSO and SIGMA represent over 90% of the motor fuel sales in the United States.[1] Our members operate in one of the most highly regulated industries due to the nature of the products they sell. It is in our members' interest to be able to provide charging options to the motoring public in a safe manner.

Fuel retailers have invested in electric vehicle chargers that are operational today.[2] In addition, many members are breaking ground on new charging capacity in the coming months and years.[3] These chargers have not proven to be a liability to our customers or employees. The installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities. In fact, the longer history of installations of chargers on motor fuel sites in Europe proves that it can be done safely.[4] Our associations are not aware of any injury or death due to a fire resulting from the installation of a charger at a gas

[1] The National Association of Convenience Stores (NACS) is an international trade association representing the convenience store industry with more than 2,200 retail and 1,600 supplier companies as members, the majority of whom are based in the United States. NATSO, Representing America's Travel Plazas and Truckstops, currently represents approximately 5,000 travel plazas and truck stops nationwide, comprised of both national chains and small, independent locations. SIGMA: America's Leading Fuel Marketers represents a diverse membership of approximately 260 independent chain retailers and marketers of motor fuel.

[2] "Wawa to Exceed 1M Electric Vehicle Charging Sessions by End of May." 2021. Convenience Store News. May 12, 2021. https://www.csnews.com/wawa-exceed-1m-electric-vehicle-charging-sessions-end-may.

[3] "7-Eleven Charges Forward with Installation of 500 Electric Vehicle Ports by End of 2022, Providing Convenient Charging Options That Drive a More Sustainable Future." 2021. Corp.7-Eleven.com. June 1, 2021. https://corp.7-eleven.com/corp-press-releases/06-01-2021-7-eleven-charges-forward-with-installation-of-500-electric-vehicle-ports-by-end-of-2022-providing-convenient-charging-options-that-drive-a-more-sustainable-future.

[4] "Circle K Charged up for Electric Vehicle Adoption." 2021. Convenience Store News. February 8, 2021. https://csnews.com/circle-k-charged-electric-vehicle-adoption.

station or motor fuel outlet. That is likely, in part, due to the existing fire code requirements in NFPA 70 that govern the installation of electrical equipment.[5]

NACS, NATSO and SIGMA recognize that there is a desire by some in the fire safety community to develop a section of the code governing motor fuel sites to provide requirements for the safe installation of electric vehicle power transfer systems. It is our belief, however, that the criteria already found in Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 address many of the concerns this new section of 30A was designed to address. The revisions we support therefore would support the desire by the fire safety community to add protections for electric vehicle chargers installed at motor fuel locations by incorporating the relevant portion of NFPA 70 which already provides robust guidance for these installations. Specifically, the proposed 30A changes include property line distance requirements and distance set-back requirements from a building that do not have unique applicability to motor fuel stations.

The recommended changes below, authored by the National Electrical Manufacturers Associations (NEMA), appropriately direct fire safety officials to the portion of the code that regulates the installation of electrical equipment while also addressing the sensitive nature of sites housing hazardous materials. NACS, NATSO and SIGMA support these changes and urges NFPA to adopt them.

Recommended Modifications:

~~1.1.6 This code shall apply to areas and equipment for the purposes of charging the battery or other energy storage device for an electric vehicle where located on a motor fuel dispensing facility.~~

1.2* Purpose. The purpose of this document shall be to provide reasonable safeguards for dispensing liquid and gaseous motor fuels into the fuel tanks of automotive vehicles and marine craft ~~and charging the battery or other energy storage device for an electric vehicle where located on a motor fuel dispensing facility~~.

~~3.3.7* Electric Vehicle (EV).~~

~~A.3.3.7 Electric Vehicle (EV).~~

~~3.3.8 Electric Vehicle Charging Station (EVCS).~~

~~3.3.9 Electric Vehicle Connector.~~

~~3.3.10 Electric Vehicle Supply Equipment.~~

~~3.3.11 Energy Storage Systems (ESS).~~

~~3.3.17 Output Cable to the Electric Vehicle.~~

~~3.3.21 Tank Vehicle.~~

Chapter 15 Electric Vehicle ~~Charging Stations~~ Power Transfer Systems

15.1 Scope. This Chapter shall apply where electric vehicle ~~charging stations (EVCS)~~ power transfer systems are installed at a motor fuel dispensing facility or repair garage.

~~15.2 Definitions Specific to Chapter 15.~~

~~15.2.1* Electric Vehicle (EV).~~

[5] Articles 511, 514, and 625 of NFPA 70

~~A15.2.1~~

~~15.2.2 Electric Vehicle Charging Station (EVCS).~~

~~15.2.3 Electric Vehicle Connector.~~

~~15.2.4 Electric Vehicle Supply Equipment (EVSE).~~

~~15.2.5 Energy Storage Systems.~~

~~15.2.6 Output Cable to the Electric Vehicle.~~

15.3 General Installation Requirements.

15.3.1 ~~Location Adjacent to Buildings or Property Lines.~~ Electric vehicle power transfer systems shall be installed in accordance with NFPA 70 and the manufacturer's installation instructions.

~~15.3.1.1~~

~~15.3.2 Location Adjacent to Storage, Handling, or Dispensing of Flammable or Combustible Liquid or Gases.~~

~~15.3.3 Location Beneath Canopies.~~

~~15.3.3.1~~

~~15.3.3.2~~

~~15.3.4 Requirements for ESS and EVSE Systems.~~

~~15.3.4.1*~~

~~A.15.3.4.1~~

~~15.3.4.2~~

~~15.3.4.3*~~

~~A.15.3.4.3~~

~~15.4 Installation Requirements.~~

~~15.4.1~~

~~15.4.2~~

~~15.4.3~~

~~15.4.4~~

~~15.4.5~~

15.5. Collison Protection.

15.5.1 ~~ESS or EVSE~~ Electric vehicle power transfer systems shall be protected against collision damage by ~~guard posts~~ bollards or other **equivalent**[6] approved means.

~~15.5.2~~

~~15.5.3~~

[6] Insertion of the term equivalent is supported by NACS, NATSO and SIGMA and is the only amendment that differs from the NEMA submission.

~~15.6 Maneuvering on Site.~~

~~15.6.1~~

~~15.6.2~~

~~15.7 Signage.~~

15.8* Operation and Maintenance. ~~EVSE~~ Electric vehicle power transfer systems shall be operated and maintained in accordance with the manufacturer's instructions.

A.15.8 See Chapter 34 of NFPA 70B for additional guidance.

~~15.8.1~~

~~15.8.2~~

~~15.9 Emergency Electrical Disconnects.~~

~~15.9.1~~

~~15.9.2~~

~~15.9.3~~

~~15.9.4~~

~~15.9.5~~

~~15.9.6~~

~~15.10 Lighting.~~

~~15.11 Fire Extinguishers~~

~~15.11.1~~

~~15.11.2~~

~~15.12 Inspection and Maintenance.~~

~~15.12.1~~

~~15.12.2~~

* * *

In closing, should the proposal proceed without modification (such as the changes we recommend) the requirements will act as a virtual prohibition on a large portion of the refueling stations across the country from installing electric vehicle charging stations. Thank for your attention to, and consideration of, this matter. We look forward to working with you through a full, deliberative process.

Sincerely,

National Association of Convenience Stores (NACS)
NATSO, Representing America's Travel Plazas and Truck Stops
SIGMA: American's Leading Fuel Marketers

Public Comment No. 7-NFPA 30A-2022 [Global Input]

We are considered a Minor Repair Garage. Due to Covid-19 and limited Fire Marshal reviewing building plans at the Cities. Fire Marshals or cities are forced to subcontract the reviewing process to companies with no formal fire science training. The NFPA has several regulations around Class I, II and III liquids and NFPA 30 and 30A vaguely mention Class IIIB, most of the time it is because it does not apply. But that is the problem we are running into. These subcontractors are including Class IIIB with Class I, II and III. After several months of going back and forth and getting the Fire Marshal involved, we are able to straighten out the issue.

I propose expanding the Class IIIB regulations:

Minor Repair Garage – Basement Indoor Storage Tanks of Flammable and Combustible Liquids with UL142 tank rating

The NFPA has separately determined that there are several allowances (less restrictive requirements) for Class IIIB combustible liquids which have high associated flash points.

- **There are no maximum capacity limits on the Class IIIB capacity of indoor storage tanks.**
- **Aboveground Class IIIB liquid storage tanks are not required to be equipped with secondary containment. Basement is considered the secondary containment.**
- **Aboveground Class IIIB liquid storage tanks are not required to be electrically grounded.**
- **Aboveground indoor Class IIIB liquid storage tanks are not required to have vent piping extend to outside the building enclosure.**
- **Aboveground indoor Class IIIB liquid storage tanks are not required to be filled or emptied from connections located outside the building.**
- **Aboveground indoor Class IIIB liquid storage tanks are allowed to be located in the basement of buildings.**
- **Aboveground indoor Class IIIB liquid storage tanks are allowed to be located in buildings of combustible construction.**
- **ASTs used only for storing Class IIIB Liquids in concrete basement tank rooms may be stored shell to shell provided they are not within the same area as or drainage path of a tank storing a Class I or II liquid.**

Or please add: "**Excludes Class IIIB**" to the current regulation in which Class IIIB does not apply.

Statement of Problem and Substantiation for Public Comment

We would like more clarification on Class IIIB liquids to minimize getting waivers from AHJ because someone misinterpreted the NFPA Class IIIB regulation. I am aware the NFPA has no real authority in enforcing the code and State Governments did not authorize them to write the codes, but different governing bodies look at the recommendations of the NFPA as law instead of writing their own. Some

building plans have taken over a year to approve and we would like to speed up the process by clarifying certain codes. Without anyone saying it, NFPA's recommendations are part of the government's law.

Related Item

• First Draft Report

Submitter Information Verification

Submitter Full Name:	JOSE HERRERA
Organization:	[Not Specified]
Affiliation:	Automotive Oil Change and Lubrication Shops, Except Repair and Carwashes
Street Address:	
City:	
State:	
Zip:	
Submittal Date:	Wed Mar 16 14:01:59 EDT 2022
Committee:	AUV-AAA

Committee Statement

Committee Action:	Rejected but held
Resolution:	This submission is considered new material. The committee would like to see specific language for specific sections of the code. There appears to be a lack of clear guidance on Class IIIB liquid tanks in a building. It is agreed that this topic should be addressed and the committee will set up a task group for the next revision cycle.

Public Comment No. 8-NFPA 30A-2022 [Section No. 1.1.3]

1.1.3*

This code shall not apply to those motor fuel dispensing facilities where only liquefied petroleum gas (LP-Gas), liquefied natural gas (LNG), compressed natural gas (CNG), or hydrogen is dispensed as motor fuel, or where both gaseous fuel storage and dispensing equipment are at least 15 m (50 ft) from any other motor fuel storage or dispensing equipment of different chemical composition, or at least 6m (20 ft) from any electric vehicle charging, or electrical energy storage systems (ESS) equipment .

Statement of Problem and Substantiation for Public Comment

The 50 ft separation between different storage or dispensing equipment is presumably due to the 25 ft hazardous clearance indoors, doubled. The EV charging or ESS is a potential source of ignition to the liquid or gaseous combustible or flammable fuel, not the other way around so there is no need to double the distance. A distance of 20 ft or 25 ft, depending on outdoor or indoor, should suffice. While lithium ion battery fires are very stubborn, their reach is not greater than other sources of ignition. See NFPA Research Paper March 2020 OSVehicleFires.pdf, NTSB Safety Report SR20/01 adopted Nov 13, 2020, NHTSA DOT HS 813 136 Aug 2021, Gas vs. Elec Car Fires (2021 Findings). The scope of the committee (AUV-AAA) is the fire and explosion hazards associated with the liquids, not the electrical equipment as a source of ignition, which is the scope of the NEC-AAC committee, thus requires coordination with the committee with primary responsibility - see 3.3.5.5. of the Regulations Governing the Development of NFPA Standards. If there is a question regarding jurisdiction it can be adjudicated by the Standards Council.

Related Item

• FR31 adds an additional scope inclusion for EV charging.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 15 20:51:17 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The location of flammable gas dispensing systems is addressed in the proposed chapter 15. The proposed revision would create a conflicting requirement for flammable gas dispensing.

Public Comment No. 9-NFPA 30A-2022 [Section No. 1.1.5]

~~1.1.5~~ ~~*~~ –

~~This code shall not apply to mobile fueling operations involving liquefied petroleum gas (LP-Gas).~~

Statement of Problem and Substantiation for Public Comment

Article 1.1.3 already indicates that this code does not apply to dispensing of only LP-Gas at least 50 ft from any other motor fuel storage or dispensing. Mobile LP-Gas dispensing would presumably fall under this exclusion. If the intent is to refer the users to NFPA 58 for mobile LP-Gas dispensing, that could be included in the Annex A per (1.6.2.2, 1.6.2.4, and 1.9.10 of the Manual on Style for NFPA Technical Committee Documents. Annex A can also clarify this standard doesn't apply to mobile LPG dispensing if informational.

Related Item

• FR9 indicates the purpose of this sentence is to refer users to NFPA 58 for mobile LP-Gas dispensing, PI-6

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 15 21:56:54 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: This provision needs to be in NFPA 30A because this code only applies to fueling stations and not to mobile fueling for LP-Gas applications (bobtails). Users should instead see NFPA 58.

Public Comment No. 10-NFPA 30A-2022 [Section No. 1.1.6]

~~1.1.6~~ –

~~This code shall apply to areas and equipment for the purpose of charging the battery or other energy storage device for an electric vehicle where located on a motor fuel dispensing facility.~~

Statement of Problem and Substantiation for Public Comment

Inclusion should be at the beginning of the scope section (revision to 1.1.1 or 1.1.2). If a fuel dispensing station incorporates electric vehicle charging, and the committee is concerned about this recent potential source of ignition for the fuel, it should be in that context. The scope of this committee (AUV-AAA) is the hazards associated with the liquids, or gaseous fuels. The risk of electricity as a potential ignition source is the primary responsibility of committee (NEC-AAC). For the risk of electrical equipment as a potential source of ignition at motor fuel dispensing facilities, NEC Article 514, it would be CMP-14. The NEC regulates the charger, ESS, and other electrical equipment, and regulates it being installed in any hazardous location (not just fuel dispensing), Article 500. NFPA 30A regulates the fuel dispensing and regulates sources of ignition near them (not just EV charging). Therefore, NFPA 30A should regulate based on proximity to the fuel dispenser, tank filling, tank vents, flammable fuel repair garage, etc., within the appropriate distances based on hazardous classification (no more than 25 ft, indoor), but not the electrical equipment. Attempting to regulate the work of another committee is a violation of 3.3.1.1(a) of the Regulations Governing the Development of NFPA Standards. This should instead be coordinated per Reg. 3.3.5.5. If a correlating committee is desired, it can be formed but within the scopes of the committees per Reg. 3.3.1.1. and if there is a question of jurisdiction, adjudication can be requested from the Standards Council.

Related Item

• FR31 added an inclusion after several exclusion clauses, and based on areas unrelated to the original inclusions (storage and dispensing of fuel).

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 15 22:03:58 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The scope of the committee is safeguarding against fire and explosion hazards associated with storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of fire hazards and

requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Public Comment No. 32-NFPA 30A-2022 [Section No. 1.2]

1.2* Purpose.

The purpose of this document shall be to provide reasonable safeguards for dispensing liquid and gaseous motor fuels into the fuel tanks of automotive vehicles and marine craft and ~~charging the battery or other energy storage device for an electric vehicle where located on~~ charging an electric vehicle or ESS at a motor fuel dispensing facility.

Statement of Problem and Substantiation for Public Comment

The scope of this committee (AUV-AAA) is the hazards associated with the liquids (or gaseous fuels), it is the scope of another committee (NEC-AAC) to minimize the risk of electricity as a potential ignition source of fires and explosions, and even the NEC does not cover "automotive vehicles other than mobile homes and recreational vehicles" (70:90.2(D)(1)). Therefore, attempting to address EVCS that aren't in proximity to the liquids contravenes 3.3.1.1(a) (Scope of Work) of the Regulations Governing the Development of NFPA Standards. It should instead be coordinated per Reg. 3.3.5.5. with NEC-AAC and CMP-14, who should lead as they have primary responsibility. Our understanding is the intent to prevent lithium ion battery fires becoming a source of ignition of fuel dispensers, or tanks. As such the EV (unknown battery chemistry) and ESS (known battery chemistry), and EVCSE (proposed definition) w/ integral storage are the concern. Since EVCSE are associated with EV charging, they don't need to be stated separately, whereas ESS could exist without EVCS. Chapter 8 can be modified to cover these additional types of electrical equipment, once coordinated with the NEC.

Related Item

• FR-31 added EVCS requirements

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sat Apr 23 22:11:21 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022
Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and

gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV

Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the

flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 13-NFPA 30A-2022 [New Section after 3.3.8]

3.3.8.5 Electric Vehicle Charging System Equipment (EVCSE)

The off-board equipment supplied by 600 V or less AC, for conductive recharging the storage batteries in over-the-road electric vehicles with DC, including optional integral stationary energy storage systems or stationary batteries.

Statement of Problem and Substantiation for Public Comment

This definition allows distinguishing between the areas (parking stall, charger location, associated electrical distribution location, etc.) and equipment (EVSE, EVCSE, non-integral ESS, etc.) based on UL product standards title . However, since these topics are within the scope of other committees (NEC-AAC), (ESS-AAA), etc., those committees should take primary responsibility for the documents, and be coordinated (per 3.3.5.5. of the Regulations Governing the Development of NFPA Standards), with this standard for the area in the vicinity of the liquids (dispensers, storage, gaseous fuels,etc.) within the scope of this committee. Definitions in the NEC are in flux, and not in alignment with the referenced UL standards, but it's still valuable to differentiate location from equipment, and different types of equipment, based on proposed requirements, where different treatment may be appropriate. If extracted, the definitions could be placed in an informative annex per 1.6.3 and 1.9.10 of the NFPA TC Style Manual, and NFPA Extract Policy, Annex A.6.

Related Item

• FR-31 adds EVCS as a space, but confuses it with equipment, in particular DC Fast Chargers (EVCSE).

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 18:58:32 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: Adding this new term is not needed. The revision to the definition of the Electric Vehicle Charging Space and the reference to Electric Vehicle Power Transfer Systems addresses the issue raised. The Electric Vehicle Supply Equipment definition was removed because the EVPTS is a more appropriate description of the system. The EVSE is deemed to be too limiting.

Public Comment No. 12-NFPA 30A-2022 [Section No. 3.3.8]

3.3.8 Electric Vehicle Charging Station (EVCS).

Any space that ~~can be~~ contains or is served by electric vehicle supply equipment ~~and a charger energy supply system~~ , or ~~used by an EV for the purpose of charging the battery or other energy storage device in an EV~~ electric vehicle charging system equipment, associated energy storage systems, or associated stationary batteries .

Statement of Problem and Substantiation for Public Comment

Since the installation of electrical equipment that could be a source of ignition are within the scope of a different committee (NEC-AAC), (EEW-AAA), (ESS-AAA), etc., those committees should take primary responsibility in this definition per 3.3.1.1 of the NFPA Regs Governing Development of Standards, and this committee should coordinate them per 3.3.5.5 of the Regs, where within its scope of the liquids, potentially as extracts per 1.6.3 and 1.9.10 of the NFPA TC Style Manual and NFPA Extract Policy. If EV Charging Station spaces (locations) are intended to include the parking stall for charging, and electrical equipment that contain significant quantities of lithium ion batteries, then those areas should be defined accordingly. A separate definition has been proposed to cover EV Charging System Equipment (EVCSE). However, both should be developed by the primary responsible committee, and coordinated with by other committees, so perhaps the comment should be directed to those committees.

Related Item

• FR-31 adds EVCS requirements, but confuses the space and the equipment.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 18:46:09 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022
Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact

information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility

has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 11-NFPA 30A-2022 [Section No. 3.3.10]

3.3.10 Electric Vehicle Supply Equipment (EVSE).

The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle~~, including an electric vehicle charger with an integrated energy supply system~~ .

Statement of Problem and Substantiation for Public Comment

If this standard is going to use the definition of the NEC, which is already proposed to change, then it should not alter the definition per NFPA Extract Policy A(1), A(2)(d) & C(1), and it should be updated per policy B(1). UL 2594, the standard referenced for EVSE, are AC output devices and "medium" speed. EVCSE, in accordance with UL 2202-2012 (R2018) are DC output, and tend to be "fast", and therefore more likely to contain batteries (similar to UL 9540 or UL 1973, but integrated). However, since the definition or regulation of electrical equipment as a source of ignition is within the scope of the NEC-AAC committee, and their primary responsibility, it would be more appropriate to coordinate with that committee per 3.3.5.5.of the Regulations Governing the Development of NFPA Standards.

Related Item

• FR-31 attempts to regulate the fast charging of lithium ion batteries in EVs, EVCSE w/ integral storage, or ESS, as a source of ignition.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 17:59:27 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments.

Public Comment No. 14-NFPA 30A-2022 [Section No. 3.3.11]

3.3.11 Energy Storage Systems (ESS).

One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time to the local power loads, to the utility grid, or for grid support. [**855,** 2020]

Informational Note: NFPA 855 applies when ESS are installed to provide input power to EVSE or EVCSE, interactive with other electric power production sources, at motor fuel dispensing facilities, as opposed to when integrated into EVCSE (outside scope of 855).

Statement of Problem and Substantiation for Public Comment

NFPA 855 covers use of distinct pieces of equipment, such as those covered by UL 9540 (think a Tesla Powerwall) that include an interactive inverter with optional islanding, or DC converter that are connected to a DC Microgrid (external to an EVCSE such as when combined with PV at a facility), that store and provide energy during normal operating conditions (as opposed to providing only standby power for power outage use). These are sometimes present at public EV charging locations, but a distinct situation to storage that is built-in to EVCSE (or EVSE) and listed as part of that equipment. Clarifying the distinction will facilitate applying requirements appropriately if the concern is battery fires as a source of ignition. However, since the issues of fire prevention of ESS is that scope of that committee (ESS-AAA), and electrical equipment the scope of (NEC-AAC), it is more appropriate to let them take primary responsibility and coordinate (per 3.3.5.5. of the Regulations Governing the Development of NFPA Standards) with them the liquids issues of this committee (in accordance with 3.3.1.1. of the Regs).

Related Item

• FR-31 is intended to provide reasonable safeguards for the relatively new risk of lithium ion battery separator fires during fast charging at motor fuel dispensing facilities.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 19:17:31 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power

transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]

~~**3.3.11** – Energy Storage Systems (ESS).~~

~~One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time to the local power loads, to the utility grid, or for grid support.~~
~~[**855,** 2020]~~

Statement of Problem and Substantiation for Public Comment

To the extent an Energy Storage Systems is integral to the charger it is covered under this chapter. Where it is separate from the charging unit it is addressed under NFPA 855. This term is not needed in this Chapter. References to ESS are proposed to be deleted in the remainder of the chapter.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	
Public Comment No. 43-NFPA 30A-2022 [Section No. 15.3.2]	
Public Comment No. 44-NFPA 30A-2022 [Section No. 15.3.3.2]	
Public Comment No. 46-NFPA 30A-2022 [Section No. 15.3.4]	
Public Comment No. 47-NFPA 30A-2022 [Section No. 15.4.5]	
Public Comment No. 48-NFPA 30A-2022 [Section No. 15.5.1]	
Public Comment No. 50-NFPA 30A-2022 [Section No. 15.5.3]	
Public Comment No. 51-NFPA 30A-2022 [Section No. 15.6.2]	

Related Item

- FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 09:15:35 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: ESS is retained in the chapter since these units are being installed as supporting equipment to EV chargers. ESS are required to comply with this code and be installed and operated in accordance with NFPA 855.

Public Comment No. 56-NFPA 30A-2022 [Section No. 7.1.3]

7.1.3

Garages for major and minor repairs of CNG and LNG vehicles shall meet ~~the~~ all relevant requirements ~~of Section 7.8~~ . identified in Section 7 of this document.

Statement of Problem and Substantiation for Public Comment

Current text is misleading in that it could be interpreted to mean only Section 7.8 will apply to CNG and LNG facilities. The provisions in Section 7.8 should apply in addition to all the other relevant provisions within Chapter 7. Many of the provisions of Section 7.4 should also apply, regardless of fuel type.

Related Item

• Public Input No. 40-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: Paul Sandsted
Organization: NGVAmerica
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 14:53:16 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected
Resolution: This Public Comment is considered new material for this revision cycle and the term "relevant" is unenforceable.

Public Comment No. 59-NFPA 30A-2022 [Section No. 7.8.1.1]

7.8.1.1

This section shall apply to the construction of new buildings ~~, existing buildings,~~ and portions of buildings serving as repair garages and repair areas for CNG and LNG vehicles.

Statement of Problem and Substantiation for Public Comment

Current language is misleading. Having “existing buildings” specifically mentioned could be interpreted as requiring all existing buildings be retrofitted.

Related Item

• 35-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: Paul Sandsted
Organization: NGVAmerica
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 16:12:44 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but held

Resolution: This provision is new material. Section 1.4 discusses retroactivity that indicates that NFPA 30A is not applied to existing building. New language will be considered by the committee for the next review cycle to clarify that the code applies to new installations and modifications.

Public Comment No. 61-NFPA 30A-2022 [Section No. 7.8.8.2]

7.8.8.2

Walls and partitions separating major repair areas from occupied spaces other than repair areas shall be ~~gastight~~ _ constructed to minimize the migration of natural gas .

Statement of Problem and Substantiation for Public Comment

There is no definition for the word gastight. In addition, consideration should be given to coordinating with NFPA 70 Table 511.3(D) which allows separation of areas adjacent to a major repair garage by “mechanically ventilating at a rate of 4 air changes per hour or more or were designed with positive air pressure or where effectively cut off by walls or partitions”.

Related Item

• 34-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: Paul Sandsted
Organization: NGVAmerica
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 16:23:07 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but held

Resolution: This is new material but warrants further review for the next revision cycle. The term “minimize” is unenforceable and new language may be proposed for the next review cycle by the committee.

Public Comment No. 63-NFPA 30A-2022 [Section No. 7.8.8.3]

7.8.8.3

Walls and partitions separating major repair areas from occupied spaces other than repair areas shall have a fire resistance rating of not less than 1 hour as defined in NFPA *101* or as determined in accordance with the adopted building code.

Statement of Problem and Substantiation for Public Comment

Clarification--is code applicable to walls or partitions as described in Paragraphs 7.8.8.1 and 7.8.8.2 or walls or partitions within the maintenance area?

Related Item

• 35-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: Paul Sandsted
Organization: NGVAmerica
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 16:32:54 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but held
Resolution: This Public Comment is new material but warrants further review for the next revision cycle.

Public Comment No. 64-NFPA 30A-2022 [Section No. 7.8.8.6]

7.8.8.6

~~Rollup~~ All doors separating major repair areas from all other interior areas shall remain closed when not in use.

Statement of Problem and Substantiation for Public Comment

Current language is not inclusive for sectional overhead doors or horizontally mounted 'barn' type doors like those commonly used in larger fire rated door assemblies.

Related Item

• 35-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: Paul Sandsted
Organization: NGVAmerica
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 16:43:15 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but held
Resolution: This Public Comment is new material but warrants further review for the next revision cycle.

Public Comment No. 65-NFPA 30A-2022 [Section No. 7.8.12.2]

7.8.12.2

Exhaust duct openings in LNG vehicle repair area shall be located so that they effectively remove vapor accumulation at floor level from all parts of the floor area.

Statement of Problem and Substantiation for Public Comment

This requirement does not apply to CNG and specification for LNG only is needed. In addition, there is no mention of where return or fresh air inlets should be placed. This appears to be an oversight.

Related Item

• 35-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: Paul Sandsted
Organization: NGVAmerica
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 16:47:34 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but held
Resolution: This Public Comment is new material but warrants further review for the next revision cycle.

Public Comment No. 66-NFPA 30A-2022 [Section No. 7.8.13.3]

7.8.13.3

The following shall be considered potential sources of ignition and prohibited from locations as specified elsewhere in this code for CNG and LNG vehicle repair areas:

(1) Open flame heaters

(2) Heating systems and other equipment ~~either not employing sealed combustion or~~ with exposed surface temperatures exceeding 399°C (750°F)

(3) Unit heaters

(4) Water heaters not employing sealed combustion

(5) ~~Fired pressure washers~~

(6) ~~Arcing and sparking tools or equipment~~

(7) fired pressure washer with open combustion chamber

(8) Gas-fired cutting torches, welding torch, soldering torch, or arc welder

Statement of Problem and Substantiation for Public Comment

6. Paragraph 7.8.13 specifically prohibits several 'sources of ignition' from all repair areas. Though most make sense, the following should be considered:

- Item 2 (Heating systems). This suggests if the system has a closed combustion chamber, the 750F limit would not apply. It seems this should apply regardless.
- Item 5 (Fired pressure washers) with a closed combustion chamber like the above heating system should be considered as acceptable.
- Item 6 (Arcing and sparking tools or equipment) suggests conventional power tools, and conventional wrenches would not be allowed. However, in major maintenance facilities and facilities for trucks and heavy equipment, non-sparking tools, which are typically of a softer metal like bronze, will not work. It is suggested that this provision be deleted.
- Item 7 (Gas fired cutting torches) it is unclear why a gas fired cutting torch would be prohibited but a welding torch, soldering torch or arc welder would not.

Related Item

• 35-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: Paul Sandsted
Organization: NGVAmerica
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 16:53:23 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action:	Rejected but held
Resolution:	This Public Comment is new material but warrants further review for the next revision cycle.

Public Comment No. 71-NFPA 30A-2022 [Section No. 9.6]

9.6 Refueling from Tank Vehicles.

The dispensing of Class I and Class II liquids in the open from a tank vehicle to a motor vehicle ~~located at commercial, industrial, governmental, or manufacturing establishments and intended for fueling vehicles used in connection with their businesses~~ shall be permitted only if all of the requirements of 9.6.1 through 9.6.~~9~~ ~~have~~ 11 have been met.

9.6.1

An

~~inspection of the premises and operations shall be made and operations shall not be conducted unless approved by the authority having jurisdiction.~~

Emergency Response Plan approved by the AHJ shall be required which outlines the hazards and response tactics associated with transportation and dispensing of motor fuels. The plan shall outline the response posture to land and marine based releases along with fires and a supporting notification matrix.

9.6.2

A Site-Specific Risk Assessment shall be completed for each location that will identify the direction of spilled material, routes of entry to sewers/waterways, exposure issues, alternate routes of egress for pedestrians and vehicles during spills and fires and water supplies for fire apparatus.

9.6.3

A site-specific assessment shall be provided to the AHJ along with affirmation of compliance with 9.6.1 through 9.6.11 of this section 30 days prior to fueling.

9.6.

~~2~~

4

The tank vehicle shall comply with the requirements of NFPA 385.

9.6.3 5

The dispensing hose shall not exceed 15 m (50 ft) in length unless AHJ approved .

9.6.4 6

The dispensing nozzle shall be a listed, automatic closing–type without a latch-open device.

9.6.5 7

Nighttime deliveries shall only be made in areas deemed adequately lighted by the authority having jurisdiction.

9.6.~~6~~ 8

The tank vehicle flasher lights shall be in operation while dispensing operations are in progress.

9.6.~~7~~ 9

Expansion space shall be left in each fuel tank to prevent overflow in the event of temperature increase.

9.6.8 – 810

A means for bonding the tank vehicle to the motor vehicle shall be provided. Such bonding means shall be employed during fueling operations.

9.6.9– .11

A spill kit designed for motor vehicle fuels shall be carried on the tank vehicle and employed in case of a fuel spill.

Statement of Problem and Substantiation for Public Comment

If we agree to allow mobile fueling for a multitude of reasons, then why do we create restrictions to impede the process. For example – If I go to Home Depot I can fill the pickup truck they rent to customers but not the customers pick up truck parked next to it ? The code should afford the same benefits to both business and private users.

Related Item

• PI

Submitter Information Verification

Submitter Full Name: Anthony Natale
Organization: Consolidated Edison of New Yor
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 18:38:27 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: In addition to this Public Comment being new material, the deletion in the first paragraph in 9.6 “located at commercial, industrial, governmental, or manufacturing establishments and intended for fueling vehicles used in connection with their businesses” is a key differentiator for when 9.6 applies to compared to chapter 14. This phrase does not exist in the IFC and it is critical that this phrase remains to direct users when to use 9.6 versus Chapter 14.

Public Comment No. 68-NFPA 30A-2022 [Section No. 11.9]

11.9 Cargo Tank Fueling Facilities.

The provisions of Section 11.2 shall not prohibit the dispensing of Class ~~II liquids~~ I liquids in the open from a tank vehicle ~~to a marine craft located at commercial, industrial, governmental, or manufacturing establishments~~ when the liquid is intended for fueling floating marine craft ~~used in connection with those establishments' businesses~~ if the requirements of 11.9.1 through 11.9.~~7~~ ~~are~~ 12 are met.

11.9.1

An inspection of the premises and operations shall be made and approval granted by the authority having jurisdiction.

11.9.2

The tank vehicle shall comply with the requirements of NFPA 385.

11.9.3

The dispensing hose shall not exceed 15 m (50 ft) in length unless approved by the AHJ .

11.9.4

The dispensing nozzle shall be a listed, automatic-closing type without a latch-open device.

11.9.5

Nighttime deliveries shall only be made in areas deemed adequately lighted by the authority having jurisdiction.

11.9.6

The tank vehicle flasher lights shall be in operation while dispensing.

11.9.7

Fuel expansion space shall be left in each fuel tank to prevent overflow in the event of temperature increase.

11.9.8

An Emergency Response Plan approved by the AHJ shall be required which outlines the hazards and response tactics associated with transportation, staging of the vehicle adjacent a bulkhead and dispensing of motor fuels. The plan shall outline the response posture to land and marine based releases along with fires and a supporting notification matrix.

11.9.9

A Site-Specific Assessment shall be required that outlines the direction of spill material, routes of entry to the waterway, sensitive locations, exposure issues, means of egress of pedestrian and vehicles during spills and fires.

11.9.10

A site-specific assessment shall be provided to the AHJ along with affirmation of compliance with 11.9.1 through 11.9.12 of this section 30 days prior to fueling.

11.9.11

Overwater transfers of motor fuels shall require a response contract with an oil spill response organization (OSRO) capable of mitigating and containing a worst-case discharge from a cargo tank vehicle outlined in section 14.

11.9.12 The OSRO must be capable of providing equipment and personnel in a timely manner to contain the release.

Statement of Problem and Substantiation for Public Comment

In many jurisdictions flammable liquids must be stored underground. The ability to phase out UST's in areas clearly influenced by tidal conditions will eliminate environmental impact and contamination of drinking water.

Related Item

• PI

Submitter Information Verification

Submitter Full Name: Anthony Natale
Organization: Consolidated Edison of New Yor
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:27:04 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution:	The Public Comment is new material. The deletion in the first paragraph in 11.9 is a key criteria or restriction that must be maintained for the section. It is not clear as to why this would only apply to Class I and not Class II liquids.The submitter's substantiation is not clear to the committee.

Public Comment No. 58-NFPA 30A-2022 [Section No. 14.1.2.2]

14.1.2.2

The dispensing of all other motor fuels from mobile refueling vehicles into the fuel tank of a motor vehicle shall be permitted only if the following requirements are met:

(1) Completion of an Emergency Response Plan which has been approved by AHJ

(2) Completion of a site specific risk ~~assessment and operating plan addressing the identified hazards~~

(3) ~~Approval of the authority having jurisdiction~~ assessement

(4) Submit to the AHJ 30 days prior to fueling, a site specific risk assessment and affirmation of complaince with section 14.2 through 14.4.

Statement of Problem and Substantiation for Public Comment

There should be an Emergency Response Plan that outlines the response posture to incidents associated with transportation and dispensing of motor fuels. In addition, a site specific risk assessment will serve to address additional hazards at the location in terms of exposures, sensitive locations, topography and direction of spilled material. In many cases the AHJ does not have the staffing to support all the approvals required by this chapter. Using a framework that captures risk and response along with confirmation of code compliance for the AHJ will allow them to make an informed decision if they so choose to delay the intent to fuel.

Related Item

• PI

Submitter Information Verification

Submitter Full Name: Anthony Natale
Organization: Consolidated Edison of New Yor
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 15:48:36 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: Chapter 14 already has sufficient requirements for emergency response planning. It is up to the AHJ to require what is needed to support a permit request and it should not be mandated by the code.

Public Comment No. 62-NFPA 30A-2022 [Section No. 14.2]

14.2 ~~Approvals and Mobile~~ Fueling Locations ~~,~~ and AHJ Oversight

14.2.1

Mobile fueling ~~operations~~ shall not ~~be conducted unless~~ occur without an Emergency Response Plan approved by the ~~authority having jurisdiction and the owner of the property on which the fueling will occur.~~ AHJ

14.2.2

Mobile fueling ~~operations~~ shall ~~occur only at approved locations.~~ not occur without the submission of a site specifir rsik assessment and affirmation of compliance with the section 14.2 through 14.4 30 days prior to fueling.

14.2.3* ~~Safety and Emergency Response Plan.~~ Response Planning

14.2.3.1

~~The authority having jurisdiction shall be permitted to require a safety and emergency response plan for locations where mobile fueling is approved.~~

An Emergency Response Plan approved by the AHJ shall be required which outlines the hazards and response tactics associated with transportation and dispensing of motor fuels. The plan shall outline the response posture to land and marine based releases along with fires and a supporting notification matrix.

14.2.3.2

~~When required, the safety and emergency response plan shall be available on each mobile fueling vehicle.~~ HazMat Security Plan shalll be developed that is consistent with the standards set forth in 49 CFR 172.800

14.2.3.3

A Site Specific Risk Assessment shall be completed for each location that will identify the direction of spilled material, routes of entry to sewers/waterways, exposure issues, alternate routes of egress for pedestrains and vehicles during spills and fires and water supplies for fire apparatus.

14.2.4 Training.

14.2.4.1*~~*~~

~~Mobile~~ The Training for mobile fueling vehicle operators ~~shall possess evidence of training on proper fueling procedures and the safety and emergency response plan.~~ will be consistent the requirements set forth under 49 CR 172.704 and shall be conducted annually.

14.2.4.2

~~The vehicle operator training shall be approved by the authority having jurisdiction.~~

In addition to the training requirements set forth under 49 CFR 172.704 mobile fueling operators will also be trained on the emergency response plan and site specific assessments for locations they service.

14.2.

~~5~~ ~~*~~

~~Mobile fueling shall not take place within 7.6 m (25 ft) of buildings, property lines, or combustible storage.~~

~~**14.2.6** –~~

~~An approved storm drain cover or equivalent method that will prevent any fuel from reaching the drain shall be used when mobile fueling occurs within 7.6 m (25 ft) of a storm drain.~~

~~**14.2.7** – Buildings and Parking Structures.~~

4.3

Training records will be maintained as required under 49 CFR 172.704 (d) and will be furnished to the AHJ upon request.

14.2.5 Dispensing Operations

14.2.

~~7~~

5 .1 _

Mobile fueling operations shall be prohibited in buildings.

14.2.

~~7~~

5 .2 _

Mobile fueling operations shall be prohibited on or in parking structures unless approved.

14.2.

~~8~~

6 _

Mobile fueling operations shall be prohibited on public streets and public ways unless approved by the authority have jurisdiction.

14.2.

~~9~~

7 * _

Where approved by the authority having jurisdiction, mobile fueling operations conducted on public streets and public ways shall comply with Chapter 14 and the following:

(1) The dispensing hose shall not cross an active traffic lane or vehicle pathway.

(2) * The mobile fueling vehicle and the dispensing hose shall not encumber a marked pedestrian crossing or bicycle lane or obstruct a pedestrian walkway.

(3) The mobile fueling vehicle's hazard warning signal and flashers shall be activated during dispensing operations.

(4) The authority having jurisdiction shall be authorized to specify time-of-day and day-of-week limitations on mobile fueling operations.

14.2.8 Mobile fueling shall not take place within 7.6 m (25 ft) of buildings, property lines, or combustible storage.

14.2.9 An approved storm drain cover or equivalent method that will prevent any fuel from reaching the drain shall be used when mobile fueling occurs within 7.6 m (25 ft) of a storm drain.

Statement of Problem and Substantiation for Public Comment

Changes provide guidance from 49 CFR 172.704 for training and 172.800 for hazmat response plan. The technical committee should consider providing an outline in the appendix of an example emergency response plan that can be used by both the preparer and the AHJ as a guide for review.

Changed title to dispensing operation to more accurately reflect the process. AHJ are understaffed and when approached for approval on this topic tend not to respond due to lack of guidance. If we have a valid process to understand and mitigate risk through the use of an ERP and site assessment wouldn't this along with affirmation of code compliance and advanced notice be enough to dispense. We have 12,000 gallons tankers dispensing through 4" hoses without fire protection coverage on major transportation / pedestrian corridors without incident and not requiring AHJ approval everyday. Is it unreasonable for a truck that carries less than the smallest compartment (1,200 gallons) to engage in similar applications with less risk ?

Related Item

• PI

Submitter Information Verification

Submitter Full Name: Anthony Natale
Organization: Consolidated Edison of New York
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 16:27:45 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The proposal does not add to the code and it appears that this is a local issue that is to be addressed. The unloading activity for a 12,000-gallon tanker is different than a dispensing action covered in this code. The 14.2.3.2 section is more related to homeland security and is outside the scope of NFPA 30A. It is not appropriate for the code to reference federal regulations. If they are required, they are required. 49 CFR 172.800 is a DOT regulation that is not relevant.

Public Comment No. 69-NFPA 30A-2022 [Section No. 14.3.4]

14.3.4

Dispensing nozzles shall be a listed, automatic closing–type with a without a latch-open device.

Statement of Problem and Substantiation for Public Comment

It should read WITHOUT a latch open device. If there was a latch open device then fueling could be unattended

Related Item

• PI

Submitter Information Verification

Submitter Full Name: Anthony Natale
Organization: Consolidated Edison of New Yor
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:56:31 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The latch open device is the safest way to operate the nozzle because there have been cases where other objects have been used to keep the nozzle in operation to override the safety features inherent in the latch open designs. There is already language in 14.4.7 for the attendant be present during refueling operations.

Public Comment No. 70-NFPA 30A-2022 [Section No. 14.3.10]

14.3.10

NO SMOKING signs shall be prominently displayed on the mobile fueling vehicle. Note: Any sign, by its color, design, shape or content, that could be confused with a placard shall be prohibited by 49 CFR 172.502 (a) (2)

Statement of Problem and Substantiation for Public Comment

No smoking signs shall not be designed in a manner to be confused with placards - referred FMCSA code 49 CFR 172.502 (a)(2)

Related Item

• PI

Submitter Information Verification

Submitter Full Name: Anthony Natale
Organization: Consolidated Edison of New Yor
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 18:12:54 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected
Resolution: It is not appropriate for the code to reference federal regulations. If they are required, they are required.

Public Comment No. 67-NFPA 30A-2022 [Section No. 14.4.10]

14.4.10 Inspection Program.

14.4.10.1

~~The mobile fueling operator shall have in place an approved vehicle inspection program.~~ No vehicle shall be operated unless a driver completes a pre-trip inspection outlined under 49 CFR 396.13

14.4.10.2

~~Vehicles shall be inspected prior to each shift with records available~~ Each driver shall complete a post-trip inspection report consistent with 49 CFR 396.11

14.4.10.3

Each motor carrier shall conduct an annual inspection of each vehcile in it's fleet usend for the purposes of mobile fueling. The inspection process shall be consistent with 49 CFR 396.17.

14.4.10.4

All inspection, testing and maintenance records will be retained as outlined under 49 CFR 396 (c) and will be furnished to the AHJ upon request.

Statement of Problem and Substantiation for Public Comment

Correlates inspection, testing and maintenance to FMCSA standards

Related Item

• PI

Submitter Information Verification

Submitter Full Name: Anthony Natale
Organization: Consolidated Edison of New Yor
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:00:12 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected
Resolution: It is not appropriate for the code to reference federal regulations. If they are required, they are required.

Public Comment No. 36-NFPA 30A-2022 [Chapter 15]

Chapter 15 Electric Vehicle Charging Stations

15.1 Scope.

This chapter shall apply where electric vehicle charging stations (EVCS) are installed at a motor fuel dispensing facility.

~~(See~~

15.

~~2 – Definitions Specific to Chapter 15.~~

~~**15.2.1** * – Electric Vehicle (EV).~~

~~An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are electric vehicles having a second source of motive power.~~

3

~~.3.7.) [**70:** 100]~~

~~**15.2.2** 15.3 –~~

~~–~~

~~Electric Vehicle Charging Station (EVCS).~~

~~Any space that can be served by electric vehicle supply equipment and a charger energy supply system, or used by an EV for the purpose of charging the battery or other energy storage device in an EV. *(See 3.3.8 .)*~~

~~**15.2.3** – Electric Vehicle Connector.~~

~~A device that, when electrically coupled (conductive or inductive) to an electric vehicle inlet, establishes an electrical connection to the electric vehicle for the purpose of power transfer and information exchange. *(See 3.3.9 .)* [**70:** 625.2]~~

~~**15.2.4** – Electric Vehicle Supply Equipment (EVSE).~~

~~The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle, including an electric vehicle charger with an integrated energy supply system. *(See 3.3.10.)*~~

~~**15.2.5** – Energy Storage Systems (ESS).~~

~~One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time to the local power loads, to the utility grid, or for grid support. *(See 3.3.11 .)* [**855,** 2020]~~

~~**15.2.6** – Output Cable to the Electric Vehicle.~~

~~An assembly consisting of a length of flexible EV cable and an electric vehicle connector (supplying power to the electric vehicle). *(See 3.3.17 .)* [**70:** 100]~~

~~**15.3.1.1** –~~

~~All parts of the EV being served shall be located on the premises.~~

General Requirements.

15.3.1 _ Location Adjacent to Buildings or Property Lines.

EVCS, ESS, and EVSE installed outdoors at motor fuel dispensing facilities shall be located as follows:

- ~~3 m (10 ft) or more from property lines~~
- ~~3 m (10 ft) or more from buildings, other than canopies, having combustible exterior wall surfaces or buildings having noncombustible exterior wall surfaces that are not part of a 1-hour fire-resistive assembly~~
- ~~1 m (3 ft) or more from buildings having exterior wall surfaces that are part of a 1-hour fire-resistive assembly~~

1) For systems with ESS, ESS located outdoors shall be separated by a minimum 10 ft (3048 mm) to exposures [NFPA 855: 4.4.3.3]

2) For non-ESS systems, follow applicable local codes for appropriate location.

15.3.2 _ Location Adjacent to Storage, Handling, or Dispensing of Flammable or Combustible Liquids or Gases.

ESS, EVCS, EVSE, and EV while charging, and the electric vehicle connector when the output cable to the EV is extended to its maximum length, shall be

~~located as follows:~~

(1) ~~6 m (20 ft) or more in all directions from a dispensing device or areas handling or dispensing flammable or combustible liquids or gases~~

(2) ~~3 m (10 ft) or more in all directions from an underground storage tank fill connection or vapor recovery connection or vent line storing flammable or combustible liquids or gases~~

(3) ~~3 m (10 ft) or more in all directions from a remote/submersible pump transferring flammable or combustible liquids or gases~~

(4) ~~3 m (10 ft) or more in all directions from the shell or ends of an aboveground tank or the aboveground tank fill connection, vapor recovery connection, or open end of the vent~~

(5) ~~3 m (10 ft) or more in all directions from vapor processing equipment and vacuum assist blowers~~

(6) ~~7.6 m (25 ft) or more in all directions from the location of a tank vehicle while transferring flammable or combustible liquids to an aboveground or underground storage tank~~

~~**15.3.3** – Location Beneath Canopies.~~

~~**15.3.3.1** –~~

~~EVCS or EVSE installed under a canopy also covering dispensers for flammable or combustible liquids or gases shall meet the separation distances in 15.3.2 .~~

~~**15.3.3.2** –~~

~~ESS shall not be installed under a canopy also covering dispensers for flammable or combustible liquids or gases.~~

~~**15.3.4** – Requirements for ESS and EVSE Systems.~~

~~**15.3.4.1** * –~~

~~ESS, EVSE, the electric vehicle connector, and the output cable to the EV shall be listed.~~

~~**15.3.4.2** –~~

~~Any modification of the ESS, EVSE, electric vehicle connector, and the output cable to the EV shall be listed or listed by report.~~

~~**15.3.4.3** * –~~

~~EVSE shall be designed to protect the employees and the public from electrical hazards, including arc flash.~~

~~**15.4** –~~

per 30a, 8.3.3.

15.4 _ Installation Requirements.

15.4.1 _

EVCS shall be designed and constructed in accordance with state and local building codes, ordinances, and this code.

15.4.

~~2 –~~

~~EVCS shall be designed so that pooling of flammable or combustible liquids cannot occur within its area.~~

- ~~Posts shall be constructed of steel not less than 100 mm (4 in.) in diameter.~~
- ~~Posts shall be filled with concrete.~~
- ~~Posts shall be spaced not more than 1.2 m (4 ft) on center.~~

~~Posts shall be set not less than 0.9 m (~~

~~15.4.~~

~~**3** –~~

~~EVSE shall be the type specified and installed in accordance with Article 625 of *NFPA 70* .~~

~~**15.4.4** –~~

~~ESS shall be the type specified and installed in accordance with NFPA 855.~~

~~**15.4.5** –~~

~~ESS and EVSE shall be installed in accordance with their listing, the equipment manufacturer's installation instructions, approved design plans, and this code.~~

~~**15.5** – Collision Protection.~~

~~**15.5.1** –~~

~~ESS or EVSE shall be protected against collision damage by guard posts or other approved means.~~

~~**15.5.**~~

~~2 –~~

~~When guard posts are installed, they shall be designed as follows:~~

~~**3**~~

~~ft) deep in a concrete footing of not less than 380 mm (15 in.) diameter.~~

- ~~The top of the posts shall be set not less than 0.9 m (3 ft) above ground.~~
- ~~Posts shall be located not less than 0.9 m (3 ft) from the ESS.~~

~~[**855:** 4.3.7.3]~~

~~**15.5.3**~~

~~–~~

~~ESS or EVSE shall be~~

~~securely bolted in~~

securely in- place per manufacturer's instructions.

15.6 – Maneuvering on Site.

15.6.

1 –

Motor vehicle traffic patterns at motor fuel dispensing facilities shall be designed to inhibit movement of vehicles that are not being charged from passing through the charging area.

15.6.

2

–

ESS, EVCS, or EVSE shall not impede or obstruct tank vehicle fuel deliveries.

15.7 – Signage.

– Emergency instructions shall be

conspicuously posted in the area of the EVCS equipment and incorporate the following or equivalent wording:

- **In case of fire:**

(1) **Use emergency stop button.**

(2) **Report accident by calling (specify local fire service number).**

(3) **Report location.**

per local code requirements.

15.8 * – Operation.

EVSE shall be operated in accordance with the manufacturer's instructions.

15.8.

1 –

The attendant shall be familiar with EVSE operation and be able to supervise and respond to an emergency.

15.8.

2 –

EVSE thermal fluids shall not be dumped into sewers, into streams, or on the ground.

15.

9 – Emergency Electrical Disconnects.

15.9.1 –

EVSE shall be provided with one or more clearly identified emergency shutoff devices or electrical disconnects and labeled with an approved sign stating "EMERGENCY ELECTRIC VEHICLE CHARGING SYSTEM SHUTOFF" or equivalent language.

15.9.2 –

Emergency shutoff devices or electrical disconnects shall be installed in approved locations accessible to patrons, but not less than 6 m (20 ft) or more than 30 m (100 ft) from the EVCS.

~~**15.9.3** –~~

~~Emergency shutoff devices or electrical disconnects shall disconnect power to all EVSE and ESS serving the EVCS not supplied by circuits that are identified as intrinsically safe and to all associated power control and signal circuits serving the EVCS and ESS.~~

~~**15.9.4** –~~

~~Emergency shutoff devices or electrical disconnects for the EVCS shall be actuated by the emergency electrical disconnect required in Section 6.7 unless the EVCS is greater than 30 m (100 ft) from any of the equipment in 15.2.2 .~~

~~**15.9.5** –~~

~~Resetting from an emergency shutoff condition shall require manual intervention.~~

~~**15.9.6** –~~

~~At attended motor fuel dispensing facilities, an additional emergency shutoff or electrical disconnect device shall be accessible to the attendant.~~

~~15.~~

10 _ Lighting.

Lighting shall be selected and installed in accordance with applicable building codes and standards and sufficient for safe operation and security.

15.

~~11 Fire Extinguishers.~~

~~**15.11.1** –~~

~~At least one portable fire extinguisher shall be provided for each group of EVSE that does not exceed a maximum travel distance of 23 m (75 ft) to any single portable fire extinguisher.~~

~~**15.11.2** –~~

~~Portable fire extinguishers shall be selected, installed, inspected, and maintained in accordance with 9.2.5.2 and NFPA 10.~~

~~**15.12** –~~

12 _ Inspection and Maintenance.

15.12.1 _

EVSE shall be periodically inspected by a person who is knowledgeable in the operation of the equipment to verify that it is in proper working order.

~~**15.12.2** –~~

~~When maintenance to the EVSE is necessary, the following precautions shall be taken before such maintenance is begun:~~

(1) ~~Only persons knowledgeable in performing the required maintenance shall perform the work.~~

(2) ~~All electrical power to the EVSE and to all associated control circuits shall be shut off at the main electrical disconnect panel.~~

(3) ~~During the maintenance period, all power and associated control circuits shall be capable of being locked in the open position and tagged with the identity of the worker servicing the equipment.~~

(4) ~~All vehicular traffic and unauthorized persons shall be prevented from entering the EVCS.~~

Statement of Problem and Substantiation for Public Comment

Refer to submitted comments to TIA 1621 dated February 22, 2022, RE: NFPA 30A TIA No. 1621.

In North America, more than 200 Supercharger locations and nearly 2,000 Supercharger stalls are located at the same property as motor fuel dispensing stations. The modifications proposed remove the repetition of requirements within existing NFPA Codes and Standards.

For example,
- 2021 NFPA 30A code, Section 8.3 “Installation in Electrical Classifications” accounts for electrical equipment installations, such as charging stations, within liquid fuel dispensing areas. The code requires that electrical systems be rated for use in proximity to flammable and combustible fuels. If EV charging stations are not rated, they are prohibited from being installed within the fueling island radius specified in the existing NFPA 30A.
- NFPA 855 addresses the proper location and installation requirements for any ESS provided for a charging station.
- NFPA 70, Article 625 covers the electrical conductors and equipment connecting an electric vehicle to premises wiring for the purposes of charging, power export, or bidirectional current flow.

Overall, EV charging stations are currently addressed applying existing NFPA and local building codes along with manufacturer's instructions.

Related Item

• PI

Submitter Information Verification

Submitter Full Name: Christina Francis
Organization: Tesla
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 10:26:17 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the

storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to

include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur.

Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition

encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 15-NFPA 30A-2022 [Section No. 15.1]

~~**15.1** – Scope.~~

~~This chapter shall apply where electric vehicle charging stations (EVCS) are installed at a motor fuel dispensing facility.~~

Statement of Problem and Substantiation for Public Comment

Another committee has the primary responsibility for electrical equipment as a source of ignition ((NEC-AAC) so should probably be the one to define this per 3.3.1.1 of the Regulations Governing the Development of NFPA Standards and should be coordinated with, per 3.3.5.5. of the Regs. Attempting to add chapter 15 which would appear to violate 3.3.1.1.(a) of the Regs by exceeding the scope of this committee since Chapter 8 already exists to regulate electrical equipment. EVCS are defined as a space, not a piece of equipment. Changes to the regulation of electrical equipment at dispensing stations should be made in Chapter 8.

Related Item

• FR-31 attempts to regulate lithium ion batteries associated with EVs, EVCSE and ESS at motor fuel dispensing facilities as they are a relatively new source of ignition.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 19:47:55 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The purpose of the proposed chapter is to provide requirements for EV charging at a motor fuel dispensing facility and repair garages. The scope has been limited to areas within 100 feet of the storage, handling, and dispensing of flammable liquids and gases.

Public Comment No. 16-NFPA 30A-2022 [Sections 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5, 15.2.6]

~~Sections 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5, 15.2.6~~

~~15.2.1~~ ~~*~~ – ~~Electric Vehicle (EV).~~

~~An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are electric vehicles having a second source of motive power. *(See 3.3.7 .)* [**70:** 100]~~

~~15.2.2~~ – ~~Electric Vehicle Charging Station (EVCS).~~

~~Any space that can be served by electric vehicle supply equipment and a charger energy supply system, or used by an EV for the purpose of charging the battery or other energy storage device in an EV. *(See 3.3.8 .)*~~

~~15.2.3~~ – ~~Electric Vehicle Connector.~~

~~A device that, when electrically coupled (conductive or inductive) to an electric vehicle inlet, establishes an electrical connection to the electric vehicle for the purpose of power transfer and information exchange. *(See 3.3.9 .)* [**70:** 625.2]~~

~~15.2.4~~ – ~~Electric Vehicle Supply Equipment (EVSE).~~

~~The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle, including an electric vehicle charger with an integrated energy supply system. *(See 3.3.10.)*~~

~~15.2.5~~ – ~~Energy Storage Systems (ESS).~~

~~One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time to the local power loads, to the utility grid, or for grid support. *(See 3.3.11 .)* [**855,** 2020]~~

~~15.2.6~~ – ~~Output Cable to the Electric Vehicle.~~

~~An assembly consisting of a length of flexible EV cable and an electric vehicle connector (supplying power to the electric vehicle). *(See 3.3.17 .)* [**70:** 100]~~

Statement of Problem and Substantiation for Public Comment

Since these definitions are in flux in the NEC, it would be appropriate to defer to the NEC-AAC committee as these pieces of equipment are within their scope (per 3.3.1.1 of the Regs Governing the Development of NFPA Standards) for primary responsibility, and coordinate with them (per 3.3.5.5. of the Regs). Also, these definitions have been incorporated into 3.3.1.x so are redundant and potentially contradictory. They also don't reflect the changes being made in the NEC per NFPA's Extract Policy Annex A.6.

Related Item

• FR-31 was intended to regulate lithium ion battery charging associated with EVs or ESS.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 19:54:20 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The definitions are extracted from the appropriate committees responsible for the definitions. In the case of these definitions, the 2023 edition of NFPA 70 was recently released. Extracted definitions are updated as revisions are made to the source documents.

Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]

~~**15.2.5** – Energy Storage Systems (ESS).~~

~~One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time to the local power loads, to the utility grid, or for grid support.~~ ~~*(See 3.3.11 .)*~~ [**855,** 2020]

Statement of Problem and Substantiation for Public Comment

To the extent an Energy Storage Systems is integral to the charger it is covered under this chapter. Where it is separate from the charging unit it is addressed under NFPA 855. This term is not needed in this Chapter. References to ESS are proposed to be deleted in the remainder of the chapter.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	Same Term
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	
Public Comment No. 43-NFPA 30A-2022 [Section No. 15.3.2]	
Public Comment No. 44-NFPA 30A-2022 [Section No. 15.3.3.2]	
Public Comment No. 46-NFPA 30A-2022 [Section No. 15.3.4]	
Public Comment No. 47-NFPA 30A-2022 [Section No. 15.4.5]	
Public Comment No. 48-NFPA 30A-2022 [Section No. 15.5.1]	
Public Comment No. 50-NFPA 30A-2022 [Section No. 15.5.3]	
Public Comment No. 51-NFPA 30A-2022 [Section No. 15.6.2]	

Related Item

- FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 09:41:27 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. Requirements for Installation and operation are referenced to NFPA 855.

Public Comment No. 41-NFPA 30A-2022 [Section No. 15.3.1]

15.3.1 Location Adjacent ~~to Buildings or~~ Property Lines.

~~EVCS, ESS, and EVSE installed outdoors at motor fuel dispensing facilities shall be located as follows:~~

(1) ~~3 m (10 ft) or more from property lines~~

(2) ~~3 m (10 ft) or more from buildings, other than canopies, having combustible exterior wall surfaces or buildings having noncombustible exterior wall surfaces that are not part of a 1-hour fire-resistive assembly~~

(3) ~~1 m (3 ft) or more from buildings having exterior wall surfaces that are part of a 1-hour fire-resistive assembly~~

~~**15.3.1.1** –~~

All parts of the EV being served and the EVSE shall be located on the premises.

Statement of Problem and Substantiation for Public Comment

This provision is inconsistent with common practices for the installation of EV chargers for other facilities and installations and is outside the scope of this code. Further the definition of a motor fuel dispensing facility is the “portion of a property where motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles...” The current code does not define at what point the portion of the property used for fueling extends to a property line. If an EV charging space meets the requirements for separation from the fuel storage, handling and dispensing equipment, this code should not address the more universal issue of setbacks from buildings or property lines or buildings.

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:09:26 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power

transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 17-NFPA 30A-2022 [Section No. 15.3.1 [Excluding any Sub-Sections]]

~~EVCS, ESS, and EVSE installed outdoors~~ EV charging stalls installed at motor fuel dispensing facilities shall be located as ~~follows:~~

(1) ~~3 m (10 ft) or more from property lines~~

(2) ~~3 m (10 ft) or more from buildings, other than canopies, having combustible exterior wall surfaces or buildings having noncombustible exterior wall surfaces that are not part of a 1-hour fire-resistive assembly~~

(3) ~~1 m (3 ft) or more from buildings having exterior wall surfaces that are part of a 1-hour fire-resistive assembly~~

electrical utilization equipment in accordance with Chapter 8

Statement of Problem and Substantiation for Public Comment

The original requirements exceed the scope of this committee since the risk of fire origination by electrical equipment is the scope of committee (NEC-AAC) for primary responsibility per 3.3.1.1. of the Regs Governing the Development of NFPA Standards and it does not appear this has been coordinated per 3.3.5.5. of the Regs. However, the NEC scope excludes motor vehicles other than motor homes and recreational vehicles. Neighboring properties would be regulated such that clearance can be similar to a fire rated wall since either a building or the charger will be there first (NFPA 5000, 101). It is not realistic to regulate electric vehicles in this code, but it is realistic to regulate the charging stall (which is usually clearly marked to avoid non-charging EV and ICE vehicles from blocking access to a charger). Treating the stall as electrical equipment is not otherwise stated, and treating it as electrical equipment will facilitate appropriate separation. If there continues to be a concern regarding the stall, the rules of Chapter 8 can be revised to address those concerns, but that should be coordinated with the NEC committee (CMP-14, or if necessary the Correlating Committee).

Related Item

• FR-31 intends to regulate the types of LI batteries most likely to suffer separator failure during fast charging as a source of ignition of motor fuel.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 19:55:52 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with

vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part

of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these

requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 18-NFPA 30A-2022 [Section No. 15.3.1.1]

~~15.3.1.1~~ –

~~All parts of the EV being served shall be located on the premises.~~

Statement of Problem and Substantiation for Public Comment

This requirement appears to exceed the scope of this committee per 3.3.1.1. of the Regulations Governing the Development of NFPA Standards, as it does not relate to the liquids, and even the NEC committee (NEC-AAC) excludes regulation of motor vehicles other than mobile homes and recreational vehicles. It is possible to regulate the EV charging stall, which is part of the installation, but that was included in PC-17. The charging stalls are usually outlined like a parking stall and include some sort of EV designation to prevent others (non-charging EVs and ICE vehicles) from blocking the stall.

Related Item

• FR-31 is intended to regulate the potential fire risk of LI battery fires during fast charging.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 20:22:34 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: This is not a unique situation to motor vehicle dispensing facilities. NFPA 30A 6.2.1 (3) already requires that all parts of the vehicle being served must be on the service station premises

Public Comment No. 19-NFPA 30A-2022 [Section No. 15.3.2]

15.3.2 Location Adjacent to Storage, Handling, or Dispensing of Flammable or Combustible Liquids or Gases.

~~ESS, EVCS, EVSE, and EV while charging, and~~ Electrical equipment including the output cable and the electric vehicle connector ~~when the output cable to the EV is~~ , extended to its maximum length, shall be located ~~as follows:~~

- ~~6 m (20 ft) or more in all directions from a dispensing device or areas handling or dispensing flammable or combustible liquids or gases~~
- ~~3 m (10 ft) or more in all directions from an underground storage tank fill connection or vapor recovery connection or vent line storing flammable or combustible liquids or gases~~
- ~~3 m (10 ft) or more in all directions from a remote/submersible pump transferring flammable or combustible liquids or gases~~
- ~~3 m (10 ft) or more in all directions from the shell or ends of an aboveground tank or the aboveground tank fill connection, vapor recovery connection, or open end of the vent~~
- ~~3 m (10 ft) or more in all directions from vapor processing equipment and vacuum assist blowers~~

~~7.6 m (25 ft) or more in all directions from the location of a tank vehicle while transferring flammable or combustible liquids to an aboveground or underground storage tank~~ in accordance with Chapter 8.

Statement of Problem and Substantiation for Public Comment

It is important to recognize that the EVCSE and EVSE include an output cable and EV connector that can be extended from the equipment enclosure and that the cable and connector are only listed for non-hazardous locations, but Chapter 8 already addresses the ignition risk once the cable/connector and EV charging stall (see PC 17) are treated as electrical equipment. This needs to be coordinated with the committee with primary responsibility for electrical equipment (NEC-AAC) per 3.3.1.1. and 3.3.5.5. of the Regulations Governing the Development of NFPA Standards. If changes to Chapter 8 are deemed appropriate they can be made there and coordinated appropriately.

Related Item

• PC 18	• FR-31 is intended to regulate the relatively new risk associated with lithium ion battery fires of EVs, EVCSE w/ integral storage, and ESS

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 20:27:55 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Public Comment No. 43-NFPA 30A-2022 [Section No. 15.3.2]

15.3.2 Location Adjacent to Storage, Handling, or Dispensing of Flammable or Combustible Liquids or Gases.

~~ESS,~~ EVCS, EVSE, and EV while charging, and the electric vehicle connector when the output cable to the EV is extended to its maximum length, shall be located as follows:

(1) 6 m (20 ft) or more in all directions from a dispensing device or areas handling or dispensing flammable or combustible liquids or gases

(2) 3 m (10 ft) or more in all directions from an underground storage tank fill connection or vapor recovery connection or vent line storing flammable or combustible liquids or gases

(3) 3 m (10 ft) or more in all directions from a remote/submersible pump transferring flammable or combustible liquids or gases

(4) 3 m (10 ft) or more in all directions from the shell or ends of an aboveground tank or the aboveground tank fill connection, vapor recovery connection, or open end of the vent

(5) 3 m (10 ft) or more in all directions from vapor processing equipment and vacuum assist blowers

(6) ~~7.6 m (25 ft) or more in all directions from the location of a tank vehicle while transferring flammable or combustible liquids to an aboveground or underground storage tank~~

Statement of Problem and Substantiation for Public Comment

This section establishes a 25 ft setback from the EV charging space to a tank vehicle while transferring flammable or combustible liquids to an aboveground or underground storage tank. Separation distances for an EV charging space are already established in 15.3.2 (3) through 15.3.2 (5) from the fill, vapor recovery connection, and remote pump. Establishing a 25 ft separation from a tank vehicle is excessive in comparison to the separation distances for points on a tank that are accessed by the tank vehicle while transferring fuel. Separation from the tank vehicle will be achieved by the distances required to maneuver an electric vehicle into and out of a charging space. This is already addressed in Section 15.6.2 which requires that the location of an EV charging space or EV charger not impede or obstruct tank vehicle fuel deliveries. An alternative would be to require that an EV charging space be designed such that there is sufficient space between a tank vehicle while transferring fuel and the EV charging space for the vehicle to maneuver in and out of the space. Further Section 15.6.1 requires traffic patterns to be designed so that movement of vehicles not being charged cannot pass through the charging area which would require sufficient space for a vehicle to pass between a tank vehicle and the EV charging space. Both provisions will result in reasonable separation distances from a tank vehicle while fueling.

Delete the Term ESS. See Comment on ESS Definition 3.3.11/15.2.5.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	Deleted Definition
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	Deleted Definition

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:18:02 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel

dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified)

areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or

the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25

ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 20-NFPA 30A-2022 [Section No. 15.3.3.1]

~~15.3.3.1~~ –

~~EVCS or EVSE installed under a canopy also covering dispensers for flammable or combustible liquids or gases shall meet the separation distances in 15.3.2 .~~

Statement of Problem and Substantiation for Public Comment

EVCS are a location, whereas the proposed EVCSE (and EVSE) are equipment. This article is referring to equipment. It is redundant to Chapter 8 and 15.3.2 and thus could simply be deleted.

Related Item

• FR-31 is intended to regulate LI battery fire risk.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 20:35:48 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer

system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition

of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are

appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging

on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 44-NFPA 30A-2022 [Section No. 15.3.3.2]

~~15.3.3.2~~ –

~~ESS shall not be installed under a canopy also covering dispensers for flammable or combustible liquids or gases.~~

Statement of Problem and Substantiation for Public Comment

See comment on ESS definition 3.3.11/15.2.5. ESS are addressed under NFPA 855.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	Deleted Definition
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	Deleted Definition

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:21:52 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022
Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing

codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in

both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to

locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which

is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 46-NFPA 30A-2022 [Section No. 15.3.4]

15.3.4 Requirements for ~~ESS and~~ EVSE Systems.

15.3.4.1*

~~ESS,~~ EVSE, the electric vehicle connector, and the output cable to the EV shall be listed.

15.3.4.2

Any modification of the ~~ESS,~~ EVSE, electric vehicle connector, and the output cable to the EV shall be listed or listed by report.

15.3.4.3*

EVSE shall be designed to protect the employees and the public from electrical hazards, including arc flash.

Statement of Problem and Substantiation for Public Comment

ESS are addressed in NFPA 855. See comments on Definition 3.3.11/15.2.5.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	Deleted Definition
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	Deleted Definition

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:33:49 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022
Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an

activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section

6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing

codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in

Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 21-NFPA 30A-2022 [Section No. 15.3.4.1]

~~15.3.4.1~~ ~~*~~ –

~~ESS, EVSE, the electric vehicle connector, and the output cable to the EV shall be listed.~~

Statement of Problem and Substantiation for Public Comment

This exceeds the scope of this committee, per 3.3.1.1 of the Regs Governing the Development of NFPA Standards. This is also redundant to 8.2.1 and 8.2.2, NEC 110.2, 110.3(C), and 625.6 (which is also redundant) so can simply be deleted. The output cable and connector are not listed separately from the EVSE or EVCSE (and if they were, they could only comply with a component standard, not equipment standard as they are not complete equipment).

Related Item

• FR-31 is intended to regulate LI battery fire risk, including in an EV

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 20:38:19 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be

outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to

provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 22-NFPA 30A-2022 [Section No. 15.3.4.2]

~~15.3.4.2~~ –

~~Any modification of the ESS, EVSE, electric vehicle connector, and the output cable to the EV shall be listed or listed by report.~~

Statement of Problem and Substantiation for Public Comment

This exceeds the scope of this committee per 3.3.1.1. of the Regs Governing the Development of NFPA standards since another committee, NEC-AAC has primary responsibility to regulate electrical equipment. EVCS are a location, whereas the proposed EVCSE is equipment. The output cord and EV connector are not distinct pieces of equipment, just a component of the EVSE or EVCSE. As electrical equipment they are all already covered by 8.2, the NEC, and in particular 110.2 regarding equipment approval, 625.6 regarding EV power transfer equipment listing, etc., and therefore this requirement should be deleted as duplication per 3.1.7(c) and 3.3.5.5 of the Regs.

Related Item

• FR-31 is intended to regulate LI battery fire risk.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 20:42:42 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022
Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle

and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all

definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power

has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements

for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging

area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 23-NFPA 30A-2022 [Section No. 15.3.4.3]

~~15.3.4.3~~ ~~*~~ –

~~EVSE shall be designed to protect the employees and the public from electrical hazards, including arc flash.~~

Statement of Problem and Substantiation for Public Comment

This is outside the scope of this committee (AUV-AAA, flammable liquids) thus violates 3.1.1, 3.1.3.4, 3.1.7, 3.3.1.1, 3.3.5.5 of the Regs Governing the Development of NFPA standards. Arc Flash is already covered more extensively in 110.16 of the NEC. Equipment safety is already covered by UL 2202 (EVCSE) or UL 2594 (EVSE). This article is not measurable and therefore problematic to enforce, thus violates 2.2.2.1 of the Manual of Style for NFPA TCs. Listing and compliance with Chapter 8.2, and the NEC address this.

Related Item

• FR-31 is intended to regulate LI battery fire risk

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 21:01:32 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022
Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated

with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the

administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic

through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents

resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 24-NFPA 30A-2022 [Section No. 15.4]

15.4 Installation Requirements.

~~15.4.1~~ –

~~EVCS shall be designed and constructed in accordance with state and local building codes, ordinances, and this code.~~

~~15.4.~~ 2

EVCS shall be designed so that pooling of flammable or combustible liquids, from the motor fuel dispensing systems or repair garage, cannot occur within its area.

15.4.3

~~EVSE shall be the type specified and installed in accordance with Article 625 of *NFPA 70* .~~

~~15.4.4~~ –

~~ESS~~ ESS located at dispensing facilities or repair garages shall be the type ~~specified~~ covered and installed in accordance with NFPA 855.

~~15.4.5~~ –

~~ESS and EVSE shall be installed in accordance with their listing, the equipment manufacturer's installation instructions, approved design plans, and this code.~~

Statement of Problem and Substantiation for Public Comment

Much of the FDR text exceeds the scope of this committee (AUV-AAA regarding liquids) thus violate 3.3.1.1. of the Regs Governing the Development of NFPA standards. The deleted criteria were redundant to several existing articles like 8.2, the NEC (CMP-14 of NEC-AAC), etc., thus violate 3.1.7(c) of the Regs. However, the criteria regarding the areas (EVCS) and reference to NFPA 855 for ESS are supplementary to existing code.

Related Item

• FR-31 is intended to regulate LI battery fire risk

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 21:06:48 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified) areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the

proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key

terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 54-NFPA 30A-2022 [Section No. 15.4.4]

~~15.4.4~~ –

~~ESS shall be the type specified and installed in accordance with NFPA 855.~~

Statement of Problem and Substantiation for Public Comment

ESS are address in NFPA 855. See comments on definition 3.3.11/15.2.5.

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 11:05:33 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. Requirements for Installation and operation are referenced to NFPA 855.

Public Comment No. 47-NFPA 30A-2022 [Section No. 15.4.5]

15.4.5

~~ESS and~~ EVSE shall be installed in accordance with their listing, the equipment manufacturer's installation instructions, approved design plans, and this code.

Statement of Problem and Substantiation for Public Comment

ESS are addressed in NFPA 855. See comments on definition 3.3.11/15.2.5.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	Deleted Definition
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	Deleted Definition

Related Item

- FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:36:41 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. Requirements for Installation and operation are referenced to NFPA 855.

Public Comment No. 25-NFPA 30A-2022 [Section No. 15.5]

~~**15.5** – Collision Protection.~~

~~**15.5.1** –~~

~~ESS or EVSE shall be protected against collision damage by guard posts or other approved means.~~

~~**15.5.2** –~~

~~When guard posts are installed, they shall be designed as follows:~~

(1) ~~Posts shall be constructed of steel not less than 100 mm (4 in.) in diameter.~~

(2) ~~Posts shall be filled with concrete.~~

(3) ~~Posts shall be spaced not more than 1.2 m (4 ft) on center.~~

(4) ~~Posts shall be set not less than 0.9 m (3 ft) deep in a concrete footing of not less than 380 mm (15 in.) diameter.~~

(5) ~~The top of the posts shall be set not less than 0.9 m (3 ft) above ground.~~

(6) ~~Posts shall be located not less than 0.9 m (3 ft) from the ESS.~~

~~[**855:** 4.3.7.3]~~

~~**15.5.3** –~~

~~ESS or EVSE shall be securely bolted in place per manufacturer's instructions.~~

Statement of Problem and Substantiation for Public Comment

The FDR text exceeds the scope of this committee (AUV-AAA) as it pertains to electrical equipment not liquids, even where within 15m
of the dispensers as proposed in our PCs, thus violates 3.3.1.1. of the Regs Governing the Development of NFPA Standards. The NEC committee (NEC-AAC, CMP-14, Correlating Committee, etc.) should lead this initiative as committee with primary responsibility, and be coordinated with per 3.3.5.5 of the Regs. This requirement is redundant to NEC 110.26(E)(2)(2) Outdoor equipment protection from vehicular traffic, and the referenced NFPA 855, thus violates 3.1.7 of the Regs. Those requirements may be referenced, but should not be repeated to avoid misalignment with changes such as by extract per the NFPA Extract Policy Annex A.6.

Related Item

• FR-31 is intended to regulate the risk of LI battery fires as a source of ignition.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:

Submittal Date: Sun Apr 17 21:12:02 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock,

electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities", incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in

Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition,

spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 48-NFPA 30A-2022 [Section No. 15.5.1]

15.5.1

~~ESS or~~ EVSE shall be protected against collision damage by guard posts or other approved means.

Statement of Problem and Substantiation for Public Comment

ESS are addressed in NFPA 855. See comment on definition 3.3.11/15.2.5.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	Deleted Definition
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	Deleted Definition

Related Item

- FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:41:30 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

Public Comment No. 49-NFPA 30A-2022 [Section No. 15.5.2]

~~**15.5.2** –~~

~~When guard posts are installed, they shall be designed as follows:~~

(1) ~~Posts shall be constructed of steel not less than 100 mm (4 in.) in diameter.~~

(2) ~~Posts shall be filled with concrete.~~

(3) ~~Posts shall be spaced not more than 1.2 m (4 ft) on center.~~

(4) ~~Posts shall be set not less than 0.9 m (3 ft) deep in a concrete footing of not less than 380 mm (15 in.) diameter.~~

(5) ~~The top of the posts shall be set not less than 0.9 m (3 ft) above ground.~~

(6) ~~Posts shall be located not less than 0.9 m (3 ft) from the ESS.~~

[~~**855:** 4.3.7.3~~]

Statement of Problem and Substantiation for Public Comment

The detailed description of guard post installations goes beyond what is currently required in Section 6.3.4 of the code for protection against collision damage for a fuel dispenser. Proposed Section 15.5.1 is consistent with the requirements for a dispenser and is all that is needed for purposes of collision damage protection for an EV charger. This is more stringent that common practice. An authority having jurisdiction can elect to apply specific requirements for collision protection.

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:43:36 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022
Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and

requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles

other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or

vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by

the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 50-NFPA 30A-2022 [Section No. 15.5.3]

15.5.3

~~ESS or~~ EVSE shall be securely bolted in place per manufacturer's instructions.

Statement of Problem and Substantiation for Public Comment

ESS are addressed in NFPA 855. See comment on definition 3.3.11/15.2.5.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:46:34 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle

and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all

definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power

has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements

for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging

area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 26-NFPA 30A-2022 [Section No. 15.6]

15.6 Maneuvering on Site.

15.6.1

Motor vehicle traffic patterns ~~at motor fuel dispensing facilities~~ shall be designed to ~~inhibit~~ minimize movement of vehicles ~~that are not being charged~~ from passing through the charging area.

15.6.2

~~ESS,~~ EVCS ~~, or EVSE~~ shall not impede or obstruct tank vehicle fuel deliveries.

Statement of Problem and Substantiation for Public Comment

My impression is the intent is to prevent gasoline drips in the areas of EV charging to ensure they don't become Class 1 Div 2 areas without appropriate classification and equipment, which is within the scope of this committee, but that should be coordinated with committee NEC-AAC, CMP-14, Correlating Committee, etc., per 3.3.5.5 of the Regs Governing the Development of NFPA Standards. If EVCS are defined as proposed (space, not equipment) to include all the locations where charging equipment or the EV charging stall are located, it is enough to say the EVCS shouldn't impede the fuel fill truck.

Related Item

• FR-31 is intended to regulate the risk of LI battery fires.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 21:16:10 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022
Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact

information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility

has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 51-NFPA 30A-2022 [Section No. 15.6.2]

15.6.2

~~ESS, EVCS, or~~ EVCS or EVSE shall not impede or obstruct tank vehicle fuel deliveries.

Statement of Problem and Substantiation for Public Comment

ESS are addressed in NFPA 855. See comment on definition 3.3.11/15.2.5.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 37-NFPA 30A-2022 [Section No. 3.3.11]	
Public Comment No. 39-NFPA 30A-2022 [Section No. 15.2.5]	

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:48:27 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle

and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all

definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power

has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements

for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging

area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 27-NFPA 30A-2022 [Section No. 15.7]

15.7 Signage.

Emergency instructions shall be conspicuously posted in the ~~area of the EVCS equipment and~~ EVCS and incorporate the following or equivalent wording:

In case of fire:

(1) **Use emergency stop button associated with the fuel dispensing .**

(2) **Report accident by calling (specify local fire service number).**

(3) **Report location.**

Statement of Problem and Substantiation for Public Comment

The scope of this standards, and the committee (AUV-AAA), is the liquid fuel. The scope of the NEC (NEC-AAC committee, CMP-14, Correlating Committee, etc.) is electrical equipment as a potential source of ignition. EVCS (the space, as proposed) covers all the EV charging equipment and stall. Since the concern is the risk of a source of ignition of the fuel, it should be made clear the E-stop to be used is the one for the fuel dispensers. If an EV catches fire at an EVCSE, it will likely have already ceased charging (due to the fault being detected) and the charging is no longer the problem, the battery is. An ESS is similar. Shutting off the power won't help much, but shutting off the pumps will reduce the chance of fire spread. Section 8.4 already requires Emergency Electrical Disconnects of electrical equipment in the vicinity of the pumps.

Related Item

• FR-31 is intended to regulate the risk of LI battery fires as a source of ignition of motor fuel.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 17 21:27:16 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The emergency stop is to disconnect the power to the EV power transfer system with the purpose of addressing an emergency occurring in the charging area.

Public Comment No. 28-NFPA 30A-2022 [Section No. 15.8]

~~**15.8** * – Operation.~~

~~EVSE shall be operated in accordance with the manufacturer's instructions.~~

~~**15.8.1** –~~

~~The attendant shall be familiar with EVSE operation and be able to supervise and respond to an emergency.~~

~~**15.8.2** –~~

~~EVSE thermal fluids shall not be dumped into sewers, into streams, or on the ground.~~

Statement of Problem and Substantiation for Public Comment

The scope of this committee is the flammable liquids so these topics don't comply with 3.3.1.1 of the Regs Governing the Development of NFPA standards. These are redundant to and not coordinated with the NEC which governs electrical equipment thus don't comply with 3.3.5.5 and 3.1.7 of the Regs. The "used in accordance with the instructions" is redundant to 8.2.2, NEC 110.3(B) Installation and Use, the attendant requirements redundant with the fuel attendant requirements such as 6.3.6, 9.4, 9.5, and the coolant dumping requirements beyond the scope of the standard as they would be environmental (water pollution) not flammability issues. Since the cooling fluids are circulating in electrical systems they aren't flammable or even combustible. EVSE don't have cooling fluids, but some EVCSE do.

Related Item

• FR-31 is intended to regulate the risk of LI battery fires.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 22 17:21:42 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The proposed deletion of operation requirements was rejected. The scope of the Committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of fire hazards and requirements to protect against potential fire risks. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See requirements in 15.4.

Public Comment No. 29-NFPA 30A-2022 [Section No. 15.9]

~~**15.9** – Emergency Electrical Disconnects.~~

~~**15.9.1** –~~

~~EVSE shall be provided with one or more clearly identified emergency shutoff devices or electrical disconnects and labeled with an approved sign stating "EMERGENCY ELECTRIC VEHICLE CHARGING SYSTEM SHUTOFF" or equivalent language.~~

~~**15.9.2** –~~

~~Emergency shutoff devices or electrical disconnects shall be installed in approved locations accessible to patrons, but not less than 6 m (20 ft) or more than 30 m (100 ft) from the EVCS.~~

~~**15.9.3** –~~

~~Emergency shutoff devices or electrical disconnects shall disconnect power to all EVSE and ESS serving the EVCS not supplied by circuits that are identified as intrinsically safe and to all associated power control and signal circuits serving the EVCS and ESS.~~

~~**15.9.4** –~~

~~Emergency shutoff devices or electrical disconnects for the EVCS shall be actuated by the emergency electrical disconnect required in Section 6.7 unless the EVCS is greater than 30 m (100 ft) from any of the equipment in 15.2.2 .~~

~~**15.9.5** –~~

~~Resetting from an emergency shutoff condition shall require manual intervention.~~

~~**15.9.6** –~~

~~At attended motor fuel dispensing facilities, an additional emergency shutoff or electrical disconnect device shall be accessible to the attendant.~~

Statement of Problem and Substantiation for Public Comment

These requirements are redundant to section 6.7 and 8.4 of this standard, and/or not coordinated with, NEC 514.11 and NEC 625.43, thus violate 3.3.1.1, 3.3.5.5, and 3.1.7 of the Regs Governing the Development of NFPA Standards. The NEC-AAC committees (CMP-14, CMP-12, Correlating Committee, etc.) have the primary responsibility for this topic. If the disconnect can be installed not less than 6m from the dispensing devices, pumps, etc., existing requirements should be adequate and repeating them written differently is inappropriate.

Related Item

• FR-31 is intended to regulate the risk of LI battery fires during charging.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:

Submittal Date: Fri Apr 22 17:40:50 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected

Resolution: The requirements for an emergency shut-off for the EV power transfer systems is not redundant to Section 6.7 or Section 8.4 of the code. This is a separate emergency shut-off for the EV power transfer system with an interconnect to the fuel dispensing emergency shut-off.

Public Comment No. 52-NFPA 30A-2022 [Section No. 15.9.3]

15.9.3

Emergency shutoff devices or electrical disconnects shall disconnect power to all EVSE ~~and ESS serving the EVCS~~ not supplied by circuits that are identified as intrinsically safe and to all associated power control and signal circuits serving the EVCS ~~and ESS~~ .

Statement of Problem and Substantiation for Public Comment

The term serving the EVCS is redundant since that is the purpose of the charger. ESS are addressed in NFPA 855 and general separate from the EVSE. To the extent an ESS is integral to the EVSE, it would be covered under the requirements for EVSE. See comment on definition 3.3.11/15.2.5.

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:50:41 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected
Resolution: To the extent an ESS is separate from the charger and providing power to the EV charger, the emergency stop should disconnect the ESS from the charger.

Public Comment No. 53-NFPA 30A-2022 [Section No. 15.9.4]

~~15.9.4~~ –

~~Emergency shutoff devices or electrical disconnects for the EVCS shall be actuated by the emergency electrical disconnect required in Section 6.7 unless the EVCS is greater than 30 m (100 ft) from any of the equipment in 15.2.2 .~~

Statement of Problem and Substantiation for Public Comment

EMA members have expressed concern over the ability and potential complexity of combining the emergency shutoff for the fuel dispensing equipment and EV chargers. The technical practicality of this provision needs to be further investigated. Electrical service for EV chargers will vary depending on the type and number of chargers and in many cases will require separate electrical services from the service to the building and dispensing equipment at a motor fuel dispensing facility.

Related Item

• FR 31-NFPA 30A-2021

Submitter Information Verification

Submitter Full Name: James Rocco
Organization: Sage Risk Solutions, LLC
Affiliation: Energy Marketers of America
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:53:43 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected
Resolution: Given the proximity of the EV charging areas to the storage, handling, and dispensing area, a fire or other emergency at either the storage, handling, and dispensing area or the charging area should result in a shut down of both systems.

Public Comment No. 30-NFPA 30A-2022 [Section No. 15.10]

~~**15.10** – Lighting.~~

~~Lighting shall be selected and installed in accordance with applicable building codes and standards and sufficient for safe operation and security.~~

Statement of Problem and Substantiation for Public Comment

This is outside the scope of this committee, thus a violation of 3.3.1.1 of the Regulations Governing the Development of NFPA Standards. If a building code is applicable, and it presumably would be if this standard is, there is no need to repeat/reference it. The NEC would also be applicable and this is redundant to 110.34(D) Work Space and Guarding, Illumination thus the requirement should be lead by the NEC-AAC committee and coordinated with per 3.3.5.5 of the Regs, rather than duplicating it in violation of 3.1.7. Alternately a building code such as NFPA 5000 would be applicable, so 4.1.4.4.2.1 and various other subdivisions would be applicable and one of those committees should be coordinated with such as BLD-IND. Lighting won't reduce the risk of battery fires, but might help read the signage. Motor fuel facilities tend to be well lit for conspicuity reasons, far greater than the minimums required for emergency egress of building codes or lighting standards.

Related Item

• FR-31 is intended to regulate LI battery fire risk.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 22 18:06:58 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than

the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in

70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated

into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.

Public Comment No. 31-NFPA 30A-2022 [Section No. 15.12]

~~**15.12** – Inspection and Maintenance.~~

~~**15.12.1** –~~

~~EVSE shall be periodically inspected by a person who is knowledgeable in the operation of the equipment to verify that it is in proper working order.~~

~~**15.12.2** –~~

~~When maintenance to the EVSE is necessary, the following precautions shall be taken before such maintenance is begun:~~

(1) ~~Only persons knowledgeable in performing the required maintenance shall perform the work.~~

(2) ~~All electrical power to the EVSE and to all associated control circuits shall be shut off at the main electrical disconnect panel.~~

(3) ~~During the maintenance period, all power and associated control circuits shall be capable of being locked in the open position and tagged with the identity of the worker servicing the equipment.~~

(4) ~~All vehicular traffic and unauthorized persons shall be prevented from entering the EVCS.~~

Statement of Problem and Substantiation for Public Comment

This is beyond the scope of this committee per 3.3.1.1. of the Regulations Governing the Development of NFPA Standards, and a redundant to 6.3.6, 9.4, 9.5, NEC 110.17 Servicing and Maintenance of Equipment thus not compliant with 3.3.5.5. and 3.1.7 of the Regs.

Related Item

• FR-31 is intended to regulate the risk of LI battery fires.

Submitter Information Verification

Submitter Full Name: Kevin Cheong
Organization: ChargePoint Inc.
Affiliation: ChargePoint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 22 21:24:40 EDT 2022
Committee: AUV-AAA

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8-NFPA 30A-2022

Statement: The scope of the committee is safeguarding against fire and explosion hazards associated storage, handling and dispensing of flammable liquids and control of fire hazard and fire protection. This includes potential sources of ignition/fire hazards and requirements to protect against potential fire risks. Identification of EV Charging as an activity within the scope of the document and addressing potential risks associated with this activity relative to the storage, handling, and dispensing of flammable liquids and gases is appropriate.

Further it is appropriate and consistent with other activities addressed in the code to add a specific chapter to address a unique activity. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or occurrence of temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

Chapter 15 addresses the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases. The EV power transfer system is just one component of the EV charging activity. The scope includes repair garages, and this addition was initially referenced in Committee Input 11.

Responses to Public Comments (PCs) that are Reject but See Related Second Revision SR-8 are below.

PC-32 (Sec 1.2). The PC was partially accepted except for removing the reference to ESS. The proposed chapter is not intended to address charging of an ESS. Section 1.1.6 was revised to align with the scope of Chapter 15 and annex material was added to clarify which codes apply outside of the 100 ft area.

PC-12 (Sec 3.3.8). The comment was rejected but the definition was changed because the previous EVCS definition was too broad. The Electric Vehicle Charging Area was revised to specifically define the area encompassing the charging activity. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space.

PC-14 (SD Sec 3.3.10) A specific reference to NFPA 855 is provided in the revised section 15.4.4.

PC-34 (Global) The committee agrees that EV power transfer systems are different than a tire inflation machine, vacuum or vending machine and that existing codes do not adequately address potential risks associated with EV charging at a motor fuel dispensing facility. Further, once a vehicle is connected to a charger, the combined vehicle, connector, cable and charging equipment are an electrical appliance subject to requirements associated with hazardous (classified) areas.

EV power transfer systems are substantially different than a tire inflation machine, vacuum, or vending machine. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. Further, none of the codes identified address EV charging, only the installation of EV Power Transfer systems. While the commenter states that they are “not aware of a single reported injury, death, or loss of property as a result of shock, electrocution, fire, or arc flash due to a hazard arising with the installation or use of electric vehicle power transfer systems at these facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk.

The deletion of 1.1.6 was rejected. This section is added to clarify that reasonable safeguards associated with the activity of charging an electric vehicle in proximity to the storage, handling and dispensing of flammable liquids and gases is within the scope of this document.

The changes to 1.2 were rejected. Consistent with the scope of this document, the purpose of the proposed chapter includes providing reasonable safeguards for EV Charging at a motor fuel dispensing facility.

The definition for electric vehicle supply equipment (3.3.10) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both Chapter 3 and the proposed Chapter 15. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA), which defines the area to be outside the hazardous (classified) areas and the Tank Vehicle, which is defined to include both a cargo mounted tank and a tractor and semi-trailer. Further, the definition of Electric Vehicle Charging Area (section 3.3.8) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to the chapter 15 title were rejected. The purpose of this Chapter is to address the activity of charging an electric vehicle. The EV power transfer system is just one component of the EV charging activity.

The deletion of 15.2 was rejected. The definition for electric vehicle supply equipment (First Draft 15.2.4) has been deleted and replaced with the broader term EV Power Transfer Systems (EVPTS) described in 70:625 in response to other comments; however, the remaining definitions are important to the understanding of the requirements for EV Charging. These definitions appear in both the proposed Chapter 15 and Chapter 3. NFPA Manual of Style requires all definitions must appear in Chapter 3, but they are also permitted to appear in the administrative section of a chapter. Definitions are extracted from NFPA 70 and NFPA 855 with the exception of the EV Charging Area (EVCA) which defines the area to be outside the hazardous (classified areas). Further the definition of Electric Vehicle Charging Area (section 15.2.2) is essential to the identification of the EV charging area for purposes of the hazardous (classified) areas described in section 15.3.2 of the first draft.

The changes to 15.3 were rejected. This section does not address installation requirements for EV power transfer systems. Rather, it defines the hazardous (classified) areas for the storage, handling and dispensing areas to be applied to the EV charging activity. These hazardous (classified) areas address both the permanent hazard associated with the dispenser and other fixed equipment and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable and combustible substances. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter.

The deletion of 15.3.2 was rejected. While hazardous (classified) areas are defined in Chapter 8 of this document, the proposed hazardous (classified) areas restrict EV charging activities within the hazardous (classified) areas regardless of the height of the EV Power transfer system and connection to the EV in order to; address both the permanent hazard associated with the dispenser and other fixed equipment, and the temporary hazard (spills and releases) associated with dispensing and transfer of flammable liquids and gases. ESS are being installed as standalone equipment as part of the control equipment for the EV power transfer systems. Reference to ESS has been retained for purposes of the hazardous (classified) areas and other requirements in the proposed chapter. (Relevant to PC-43)

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Damage to EV power transfer systems and the EV could result in an electrical hazard or fire. This section requires design of the charging area to minimize movement through the area by vehicles other than those intending to charge. This is consistent with the requirements of section 6.3.7 for dispensing equipment.

The deletion of FD 15.7 (SD 15.6) was rejected. Signage provides emergency contact information to persons charging a vehicle in the event of an emergency. This is consistent with the requirements of section 9.5.3 for the motor fueling area.

The deletion of FD 15.9 (SD 15.7) was rejected. While the EV power transfer system has breakers and shut-off switches at control panels, an emergency stop provides an easy to locate and use single location for a person charging a vehicle to ensure that the power has been disconnected from the charging unit and all dispensing equipment.

The deletion of FD 15.11 (SD 15.8) was rejected. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. It is recognized that a fire extinguisher may not be appropriate for a battery fire, but may reduce potential for the fire to spread to other areas or persons.

PC-60 (Global) The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that “the installation and use of electric vehicle power transfer systems does not increase the risk of an electrical or fire hazard at motor fuel dispensing facilities”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. See responses to PC No. 34 to address remainder of comments.

PC-36 (Global). Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee does not agree that Chapter 8 of 30A and Articles 511, 514, and 625 of NFPA 70 adequately address EV charging at a motor fuel dispensing facility. Existing codes only address the EV power transfer equipment and not the EV or the area where the activities associated with EV charging take place. EV power transfer systems are significantly higher power units that are part of a fueling activity requiring interaction by a driver to initiate and complete a power transfer. While the commenter states that available data indicates that there are “25 electric vehicle fires per 100,000 vehicles, while gasoline and hybrid vehicles had 1,530 fires/100k vehicles and 3,475 fires/100k vehicles, respectively”, incidences of lithium-ion batteries igniting during charging events or just sitting idle have been reported and have been associated with battery recalls to repair/replace defective batteries. Further, uses and misuse of an EV and the power transfer system over time could affect the performance of this equipment and increase potential ignition/fire risks associated with vehicle charging. In addition, spills and releases from liquid fueling equipment can impact the charging area placing the facility, driver, other patrons, and vehicles at risk. It is also important to note that the Commenter points out that “When located at the same property as liquid fueling, Tesla designs stations so that charging equipment is typically located on the periphery of the property in close proximity to existing electric utility infrastructure.”

The deletion of 15.2.1 through 15.2.6 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Providing definitions of key terms is important for users to understand the requirements of the chapter.

The changes to 15.3.2 were rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. EV charging is significantly different than the placement of other fixed electrical equipment (e.g., tire inflation machines, vacuum, or vending machines) that may be installed at a motor fuel dispensing facility. Existing codes including Chapter 8 address the EV power transfer systems, but not the vehicle and charging activity or temporary hazards (spills, releases) associated with the flammable liquid and gas storage, handling, and dispensing.

The deletion of First Draft 15.5 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Collision protection has been consolidated into the revised section 15.4

The deletion of First Draft 15.6 (Second Draft 15.5) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards.

The deletion of FD 15.7 (SD 15.6) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. Signage in the EV charging providing information to respond to an emergency is needed.

The deletion of FD 15.8 was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. See material moved to 15.4.

The deletion of FD 15.9 (SD 15.7) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. As is the case with the dispensing area, an emergency shut-off is needed to ensure power is disconnected from the charging area and dispensing area in the event of a fire or other emergency.

The deletion of FD 15.11 (SD 15.8) was rejected. Specific requirements for EV Charging on a motor fuel dispensing facility are appropriate. The committee believes it is prudent to provide a fire extinguisher in the EV charging area to address small fires that may occur. It is recognized that a fire extinguisher may not be appropriate for a battery fire but may reduce potential for the fire to spread to other areas or persons.

PC-17 and PC-41 (Sec 15.3) This section has been revised as locations adjacent to property lines and buildings are outside the scope of this chapter.

PC-43 (Sec 15.3.2). See response to Sec. 15.3.2 in PC-34.

First Draft Section 15.3.2(6) [SD section 15.3.2(7)] has been revised to eliminate the 25 ft set back and replace it with a 10 ft hazardous (classified) area around the transfer valves and vapor return connection of the tank vehicle.

PC-20 and PC-44 (FD Sec 15.3.3) The section on Location Beneath Canopies was deleted. EV charging can be conducted under a canopy but still complies with the hazardous (classified) areas. Section 15.3.3.2 was deleted because the ESS is addressed as part of the EV power transfer system.

Section 15.3.2.2 is added so that the requirements in 15.3.2 are consistent with NFPA 58.

Pooling requirements have been revised to be specific to surface spills of flammable liquids draining through or pooling within the charging area and moved to new Section 15.3.3.

PCs 21, 22, 23 and 46 (FD Sec 15.3.4) This section has been deleted because these requirements are defined in NFPA 70 and NFPA 855.

PCs 24, 25, 49 and 50 (SD Sec 15.4) This section has been revised to include EV power

transfer systems and ESS installation, operation, and maintenance requirements and collision protection. Specific requirements have been removed and replaced with references to appropriate codes, such as NFPA 70 and building codes. Collision protection requirement has been revised to require collision protection as approved by the Authority Having Jurisdiction consistent with the requirements for dispensers in Section 6.3.4.

PC-26 (FD Sec 15.6, SD Sec 15.5). The reference to the motor fuel dispensing facility has been retained since charging areas can be located outside the motor fuel dispensing facility and not subject to the requirements of this proposed chapter. The term “inhibit” was revised to “minimize” as proposed.

SD Section 15.5, Maneuvering on Site, has been revised to the EV charging area which is inclusive of the charger and related equipment. Vehicle traffic through the charging area or while a tank vehicle is transferring to a storage tank can result in accidents resulting damage to equipment and possible fire hazards. (PC-36 and PC-60).

PC-51 (SD Sec 15.5.2) This section was updated to include the EVCA as this definition encompasses the newly proposed EVPTS.

First Draft 15.9 (SD 15.7), Emergency Electrical Disconnects, has been revised to limit the area to which it applies to 100 feet. The EVCA is used for EV Charging Area because the Federal Highway Administration uses the term EV Charging Space. The requirement for a separate emergency shutoff for an attended motor fuel dispensing facility was deemed too difficult to implement.

PC-30. First Draft section 15.10 on Lighting has been deleted. Lighting requirements are addressed by other codes such as building codes.

PC-31. First Draft section 15.12 on Maintenance has been deleted. A reference to maintenance has been incorporated into the revised section 15.4.