



NATIONAL FIRE PROTECTION ASSOCIATION

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MINUTES

NFPA Technical Committee on Fire Pumps (FIM-AAA) NFPA 20 First Draft Meeting (Annual 2027)

October 9-10, 2025
8:00 am – 5:00 pm (EDT)

Quincy, MA / Teleconference

1. **Call to order.** Milosh Puchovsky, chair, called the meeting to order at 8:00 am (ET) on October 9, 2025.
2. **Introductions.** Attendees introduced themselves and identified their affiliation.
3. **Chair report.** Milosh Puchovsky welcomed attendees and provided an overview of the meeting.
4. **Staff liaison report.** Michael Cassidy provided an overview of the standards development process.
 - a. No members declared that they had been retained to represent the interest of an entity that would be classified in an interest category different from their own with respect to a specific issue or issues that were addressed by the committee.
5. **Previous meeting minutes.** The minutes from October 25-26, 2023 [NFPA 20 Second Draft Meeting (Annual 2024) Web/Teleconference] were approved without revision.
6. **NFPA 20 First Draft.**
 - a. **Review of Public Inputs.** The Technical Committee reviewed the Public Inputs and developed First Revisions and Committee Inputs as necessary. These will be available in the First Draft Report at www.nfpa.org/20next.
 - b. **Task group report(s).** The following task groups provided their reports and recommendations.
 - i. **Public Input Review Task Group 1 (Pumps).** Tony Spencer. The task group provided a report (see attached), and revisions were made. The task group was reconstituted to continue work. Chair: Tony Spencer. Members: R.T. Leicht, Michael Aaron, John Denhardt, John Campbell, Steve Maglione, Marvin Yoder, Jr. Floyd Luinstra, Aaron Johnson.
 - ii. **Public Input Review Task Group 2 (Electrical).** William Stelter. The task group provided a report (see attached), and revisions were made. The task group was reconstituted to continue work. Chair: William Stelter. Members: Kevin Hall, Richard Holub, Timothy Evans, Edward Ramirez, Alexander Popov, Peter Petrus.

These minutes are considered preliminary until approved at the next committee meeting.

- iii. **Public Input Review Task Group 3 (High Rise).** David Fuller. The task group provided a report, and no revisions were made, because no Public Inputs were submitted pertaining to their scope. The task group was reconstituted to continue work. Chair: David Fuller. Members: Michael Aaron, Brad Cronin.
- iv. **Public Input Review Task Group 4 (Positive Displacement Pumps).** Don Goosman. The task group provided a report (see attached), and revisions were made. The task group was reconstituted to continue work. Chair: Don Goosman. Members: Michael Aaron, Vincent Rodriguez, Terry Victor, Steve Gordon, John Hulett, Jeffrey Roberts.
- v. **Public Input Review Task Group 5 (Engines).** Mike Dawson. The task group provided a report (see attached), and revisions were made. The task group was reconstituted to continue work. Chair: Mike Dawson. Members: Kerry Bell, Mohamed Kheir, Damon Pietraz, Jeffrey Roberts, John Whitney.
- vi. **Public Input Review Task Group 6 (Testing)** Terry Victor. The task group provided a report (see attached), and revisions were made. The task group was reconstituted to continue work. Chair: Terry Victor. Members: John Campbell, Pzemek Dobrzycki, Joseph Sanford, Stephen Jaskolka, Steve Gordon, Floyd Luinstra, Damon Pietraz.
- vii. **Public Input Review Task Group 7 (Fire Pump Peak Driver Sizing).** Brian Buscher. The task group provided a report (see attached), and revisions were made. The task group was reconstituted to continue work. Chair: Brian Buscher. Members: John Whitney, Steven Baird, Damon Pietraz, Keven Hall, William Stelter, David Fuller, Marvin Yoder, Jr. Mike Joanis, Tony Spencer, Don Goosman, Kerry Bell.
- viii. **Public Input Review Task Group 8 (Annex D).** Rich Holub. The task group provided a report (see attached), and revisions were made. The task group was reconstituted to continue work. Chair: Rich Holub. Members: William Stelter.
- c. **Presentation(s).** The committee heard presentations from the following individuals.
 - i. **Fire Pump Driver Sizing.** Todd Weir. Presentation attached.
- d. **New task groups.** The following task groups were appointed to work subsequent to the meeting:
 - i. **Task Group on Protected Access.** TG Chair: Tim Hennessey. Members: Marvin Yoder, Alex Popov, R. T. "Whitey" Leicht, and Jeff Roberts. This task group will review the requirements regarding fire pump protected access in 4.14.2.1.1.2. The task group will provide public comments prior to the Second Draft meeting in Fall 2026.
 - ii. **Task Group on Fire Rated Barriers.** TG Chair: Tim Hennessey. Members: Marvin Yoder, Alex Popov, and Jeff Roberts. This task group will review the language throughout the standard regarding the terminology fire rated vs fire resistance rated. The task group will provide public comments prior to the Second Draft meeting in Fall 2026.

7. Other Business.

- a. **Single Phase Motor Listing Conflict (9.5.1.1 and 9.5.1.2).** Bill Stelter gave an overview of the conflict and a committee input was created (CI-53).

- b. **2 vs. 3 Phase Switching for Contactors and Soft Start Controllers.** Bill Stelter gave an overview of the issue revisions were made to 10.4.5.
 - c. **NFPA Cybersecurity Advisory Committee (CAC) Recommendations.** Michael Pallett gave an overview of the recommendations from the CAC, committee inputs were created on A.10.5.2.8.1.1 and A.12.7.2.8.1.1.
 - d. **Task Group 8.** Task Group 8 along with Al Torrisi is to review NFPA 70 Article 695 on selective coordination, generators, and overhead lines and submit public input to NFPA 70 if necessary to coordinate with NFPA 20.
 - e. **Task Group 6.** Task Group 6 is investigating flushing requirements in NFPA 20 for possible revision.
- 8. Future meetings.** The next anticipated committee meeting will be the Second Draft meeting in Fall 2026. A meeting notification will be posted at www.nfpa.org/20next when the meeting is scheduled.
- 9. Adjournment.** The meeting was adjourned at 2:35 pm (ET) on Oct. 10, 2025.

Attendees

Committee Members:

X	Puchovsky, Milosh T.	Chair	Worcester Polytechnic Institute
X	Baird, Steven	Principal	Armstrong Fluid Technology
	Buscher, Brian	Principal	AC Fire Pump Systems
X	Campbell, John D.	Principal	NV5
*X	Connolly, Michael	Principal	Jacobs
*X	Cronin, Bradford T.	Principal	Avon Fire Department
	Dadgardoust, Mohammad	Principal	LRI Engineering Inc.
*X	Dawson, Mike	Principal	Cummins Sales and Service
X	Denhardt, John August	Principal	American Fire Sprinkler Association (AFSA)
X	Dobrzycki, Przemek	Principal	Pentair
*X	Evans, Timothy	Principal	UL Solutions
X	Francis, Christina F.	Principal	Tesla
X	Fuller, David B.	Principal	FM Approvals
*X	Goosman, Donald G.	Principal	Wiss, Janney, Elstner Associates, Inc.
	Gordon, Steve	Principal	Peerless Pump Company
	Hulett, John L.	Principal	APi National Service Group
*X	Jaskolka, Stephen M.	Principal	Haines Fire & Risk Consultants

X	Johnson, Aaron	Principal	Fire Lion Global LLC
	Kheir, Mohamed Ezzat	Principal	Kheir Group
*X	Leicht, R. T.	Principal	Springfield Township
*X	Luinstra, Floyd	Principal	Oklahoma State University
X	Maglione, Stephen Thomas	Principal	Dominion Energy
X	McGrath, Jennifer	Principal	Wilco USA LLC
	Petrus, Peter Placidus	Principal	Indonesian Fire & Rescue Foundation
*X	Pietraz, Damon T.	Principal	Underwood Fire Equipment, Inc.
X	Popov, Alexander	Principal	Jensen Hughes
	Ramirez, Edward A.	Principal	ExxonMobil
X	Roberts, Jeffrey R.	Principal	AXA XL/Global Asset Protection Services, LLC
	Rodriguez, Vincent	Principal	Apex Pumping Equipment, Inc.
	Rothmier, Michael A.	Principal	UA Joint Apprenticeship Committee LU 669
*X	Sanford, Joseph R.	Principal	Liberty Mutual Property Risk Engineering
X	Spencer, Tony M.	Principal	Patterson Pump Company
X	Stelter, William F.	Principal	Master Control Systems, Inc.
*X	Alfio Torrisi	Principal	
X	Victor, Terry L.	Principal	Risk Suppression Partners, LLC
*X	Whitney, John	Principal	Clarke Fire Protection Products, Inc.
X	Yoder, Jr., Marvin F.	Principal	PREMIERflow
	Aaron, Michael E.	Alternate	Wiss, Janney, Elstner Associates, Inc.
X	Varghese, Emil Aji	Alternate	Armstrong Fluid Technology
X	Bell, Kerry M.	Alternate	UL LLC
	Charter, Virginia R.	Alternate	Oklahoma State University
	de Nooij, Tom	Alternate	Riskonet B.V.
X	Dembkowski, Mike	Alternate	Clarke Fire Protection
	Frakes, Brandon W.	Alternate	AXA XL/Global Asset Protection Services, LLC
X	Franks, Joseph A.	Alternate	Pittsburgh Sprinklerfitters UA 542
X	Hall, Kevin R.	Alternate	American Fire Sprinkler Association (AFSA)
	Helms, Doug	Alternate	Hubbell Industrial Controls

X	Hennessey, Timothy Patrick	Alternate	Tesla, Inc.
*X	Holmgren, Jared	Alternate	Fire Lion Global
*X	Holub, Richard A.	Alternate	The DuPont Company, Inc.
	Holzkopf, Steven D.	Alternate	APEX Pumping Equipment, Inc.
X	Joanis, Michael J.	Alternate	National Fire Sprinkler Association (NFSA)
*X	Lewis, Cameron	Alternate	Extreme Fire Protection Company
	Miller, Jeremy	Alternate	Liberty Mutual
X	Montembeault, Travis M.	Alternate	Peerless Pump
	Moran, Michael R.	Alternate	State of Delaware
*X	Rago, Anthony Joseph	Alternate	Jensen Hughes
*X	Vesely, Craig M	Alternate	Alliant Energy
X	Weir, Todd Joseph	Alternate	AC Fire Pump Systems
X	Cassidy, Michael	Staff Liaison	National Fire Protection Association
X	Bakaj, Patrick	Staff Liaison	National Fire Protection Association

Guests:

Duffy, Chad	National Fire Protection Association
*Schwab, Peter	Wayne Automatic Fire Sprinkler
*Griffith, Joshua	Army Corps of Engineers
*Pallet, Michael	NFPA Cybersecurity Advisory Committee
Quinn, Tom	Quinn Fire Pump Inc.
*Goss, Tom	National Fire Protection Association
*Paoletti, Brian	UL
Ike, Gary	Talco Fire Systems

*Participated by teleconference

Total number in attendance: 51

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NFPA 20 PI Review Task Group 1 Report

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
Global	8		Make a motion to create first revision based on PI 8
Public Input Text (PI):	Remove the word "safety" from the phrase "safety relief valve" or replace the word "safety" with the appropriate adjective (such as main relief valve or circulation relief valve). In lieu of this, provide a definition for "safety relief valve". It is not clear what type of valve is being called for in sections 8.5.2.1, 8.5.4.1, 8.5.4.2, and 14.2.6.4.2. It appears that the phrase should be "circulation relief valve". There is no definition for a safety relief valve.		
Proposed Committee Text (FR):	3.3.78.4 Relief Valve <u>(Safety Relief Valve)</u>. A device that allows the diversion of liquid to limit excess pressure in a system.		
Proposed Statement (Substantiation):	See TG4		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:

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New 6.3	55	Make a motion to reject PI 55 - passed
Public Input Text (PI):	6.3 Water Mist Centrifugal Pumps. ▲ 6.3.1 Water mist centrifugal pumping units shall be dedicated to and listed as a unit for fire protection service. ▲ 6.3.2 Where provided with a variable speed control, failure of the variable speed control feature shall cause the controller to bypass and isolate the variable speed control system. ▲ 6.3.3 Pumps for water mist systems shall have adequate capacities to meet the maximum system demand for their intended service. ▲ 6.3.4 NPSH shall exceed the pump manufacturer's required NPSH plus 5 ft (1.52 m) of liquid. ▲ 6.3.5 The inlet pressure to the pump shall not exceed the pump manufacturer's recommended maximum inlet pressure.	
Proposed Committee Text (FR):		
Proposed Statement (Substantiation):	The submitter should provide further clarification on the differences from other centrifugal pumps, specifically the NPSH plus 5 ft requirement. No technical substantiation for the change was provided.	

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
1.1.1	4		Make a motion to create first revision based on PI 4 - passed
Public Input Text (PI):	1.1.1 This standard deals with <u>shall provide the minimum requirements for</u> the selection and installation of pumps supplying liquid for private fire protection.		
Proposed Committee Text (FR):	1.1.1 This standard deals with <u>shall provide the minimum requirements for</u> the selection and installation of pumps supplying liquid for private fire protection.		
Proposed Statement (Substantiation):	This revision aligns the scope of NFPA 20 with other NFPA water-based standards. NFPA standards, including this one, establish the minimum requirements for fire protection.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.3.3.3	11		Make a motion to create first revision based on PI 11 with the following changes - passed
Public Input Text (PI):	4.3.3.3 Qualified personnel shall include, but not be limited to, one or more of the following: 1. Personnel who are factory trained and certified for fire pump system installation of the specific type and brand of system being designed		

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	2. *Personnel who are certified by a nationally recognized fire protection certification organization acceptable to the authority having jurisdiction 3. Personnel who are registered, licensed, or certified by <u>athe federal, state, county, or local authority acceptable to the authority having jurisdiction</u>
Proposed Committee Text (FR):	4.3.3.3 Qualified personnel shall include, but not be limited to, one or more of the following: 1. Personnel who are factory trained and certified for fire pump system installation of the specific type and brand of system being designed 2. *Personnel who are certified by a nationally recognized fire protection certification organization acceptable to the authority having jurisdiction 3. Personnel who are registered, licensed, or certified by <u>a the federal, state, county, or local authority and acceptable to the authority having jurisdiction.</u>
Proposed Statement (Substantiation):	The terms “federal”, “state”, and “county” are most commonly used in the United States. As NFPA standards continue to be used in other parts of the world, removing this specific terminology will give the local authority the ability to determine Qualified Personnel.

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.7.6	56		Defer to TG7

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Public Input Text (PI):	4.7.6* The driver shall be selected in accordance with 9.5.2 {for electric motors} , 11.2.2 {for diesel engines} , or 13.1.2 {for steam turbines} to provide the required power to operate the pump at rated speed and maximum pump load under any <u>up to 200 percent rated</u> flow condition .
Proposed Committee Text (FR):	
Proposed Statement (Substantiation):	

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.7.7.2	9		Make a motion to create first revision based on PI 9 with the following changes
Public Input Text (PI):	4.7.7.2* Pressure-Circulation relief valves and pressure-regulating devices in the fire pump installation shall not be used as a means to meet the requirements of 4.7.7.1.		

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Proposed Committee Text (FR):	4.7.7.2* Pressure -Main relief valves and pressure-regulating devices in the fire pump installation shall not be used as a means to meet the requirements of 4.7.7.1.
Proposed Statement (Substantiation):	Section 4.7.7 refers to Maximum Pressure for Centrifugal Pumps. 4.7.7.2 references 4.7.7.1 which describes exceeding the maximum pressure rating of components. The definitions for Circulation Relief Valve 3.3.78.4.1 and Main Relief valve 3.3.78.4.2 differentiate a valve used for cooling verses a valve used to relieve excess pressure. A Main relief valve is correct in this section as its function is to protect against over pressure during abnormal events such as a driver overspeed. A Circulation relief valve is used to prevent heat buildup in the pump during a no-flow event such as a closed valve in the discharge piping and is not large enough to relieve over pressurization.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.8.5	43		Defer to Task Group 2

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Public Input Text (PI):	4.8.5 As a minimum, each variable speed drive control unit shall be provided in a National Electrical Manufacturers Association (NEMA), Type 43 , watertight enclosure with an ingress protection (IP) rating of IP66 IP54 .
Proposed Committee Text (FR):	
Proposed Statement (Substantiation):	

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.14.2.1.1.2	15		Hold - Request NFPA20 full committee input
Public Input Text (PI):	4.14.2.1.1.2 Where a fire pump is installed in a parking garage or some other portion of a building separated from the rest of the building by fire-rated construction equivalent to the pump room, and the portion of the building containing the fire pump and pathway to the fire pump is protected by a sprinkler system that does not rely on the fire pump, the fire-resistant-rated protected access to the pump room shall not be required.		
Proposed Committee Text (FR):			

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Proposed Statement (Substantiation):	TG 1 was not able to reach a conclusion.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.16.6.4	24		Make a motion to create first revision based on PI 24
Public Input Text (PI):	4.16.6.4 Eccentric Tapered Reducer or Increaser. Where the suction pipe and pump suction flange are not of the same size, they shall be connected with an eccentric tapered reducer or increaser installed in such a way as to avoid air pockets. 4.16.6.4.1 Unless required by 4.16.6.4.2, the flat portion of the reducer shall be installed on the top, with the actual reduction in pipe diameter taking place on the bottom of the fitting. 4.16.6.4.2 Where supplied from above, the flat portion of the reducer shall be installed on the bottom, with the actual reduction in pipe diameter taking place on the top of the fitting.		
Proposed Committee Text (FR):	4.16.6.4 Eccentric Tapered Reducer or Increaser. Where the suction pipe and pump suction flange are not of the same size, they shall be connected with an eccentric tapered reducer or increaser installed in such a way as to avoid air pockets. 4.16.6.4.1		

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	<u>Unless required by 4.16.6.4.2, the flat portion of the reducer shall be installed on the top, with the actual reduction in pipe diameter taking place on the bottom of the fitting.</u> <u>4.16.6.4.2</u> <u>Where supplied from above, the flat portion of the reducer shall be installed on the bottom, with the actual reduction in pipe diameter taking place on the top of the fitting.</u>
Proposed Statement (Substantiation):	NFPA 20 aims to clarify common installation practices where other water piping standards dictate but may not be known. The update follows the Hydraulic Institute enhanced content as well as other water piping standards.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.27.1	18		See PI 19
Public Input Text (PI):	4.27.1 For pressure-actuated fire pumps, a means to maintain the pressure in the fire protection system shall be provided in accordance with one of the following: 1. A jockey pump <u>2.</u> A water mist positive displacement pumping unit in accordance with 8.5.7.2 2-3. <u>A fire pump listed specifically for dual service as the jockey pump and fire pump</u> 3-4. Another approved means that is not the main fire pump		

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Proposed Committee Text (FR):	
Proposed Statement (Substantiation):	The proposed requirement should not be in NFPA 20, as over-current protection for a Jockey Pump is per NEC (NFPA 70). NFPA 20 only allows locked rotor protection for 8 to 12 seconds. The submitter should provide UL listing documentation and duty cycle information.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.27.1	19		Make a motion to reject PI 19 (18, 19)
Public Input Text (PI):	4.27.1 For pressure-actuated fire pumps, a means to maintain the pressure in the fire protection system shall be provided in accordance with one of the following: 1. A jockey pump <u>2.</u> A water mist positive displacement pumping unit in accordance with 8.5.7.2 2-3. <u>A fire pump and controller assembly listed for such purpose</u> 3-4. <u>Another approved means that is not the main fire pump</u>		

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Proposed Committee Text (FR):	
Proposed Statement (Substantiation):	The proposed requirement should not be in NFPA 20, as over-current protection for a Jockey Pump is per NEC (NFPA 70). NFPA 20 only allows locked rotor protection for 8 to 12 seconds. The submitter should provide UL listing documentation and duty cycle information.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.27.1	39		Make a motion to reject PI39
Public Input Text (PI):	4.27.1 For pressure-actuated fire pumps, a means to maintain the pressure in the fire protection system shall be provided in accordance with one of the following: 1. A jockey pump 2. A water mist positive displacement pumping unit in accordance with 8.5.7.2 3. Another approved means that is not the main fire pump larger than 50 HP		
Proposed Committee Text (FR):			
Proposed Statement (Substantiation):	Not enough information has been provided. The committee is concerned with upper horsepower limits suggested. The submitter		

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	should provide UL listing documentation and duty cycle information.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.27.7	17		Make a motion to reject PI 17
Public Input Text (PI):	4.27.7 Except as permitted in Chapter 8, the primary or standby fire pump shall not be used as a jockey pump. 4.27.7.1 The primary or standby pump shall be allowed to be used as the jockey pump when specifically listed for maintaining system pressure.		
Proposed Committee Text (FR):			
Proposed Statement (Substantiation):	The over current protection for a jockey pump is in accordance with NEC. The over current protection for the fire pump controller is in accordance with NFPA 20 and has no protection below 300%. The submitter should provide UL listing documentation and duty cycle information.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.27.7	40		Make a motion to reject PI 40

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Public Input Text (PI):	4.27.7 Except as permitted in Chapter 8 or chapter 10 , the primary or standby fire pump shall not be used as a jockey pump.
Proposed Committee Text (FR):	
Proposed Statement (Substantiation):	No chapter 10 PI was submitted on Jockey Pump controllers so the reference is not valid.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.29.3.1	53		Make a motion to reject PI 53
Public Input Text (PI):	4.29.3.1 Where a backflow preventer with butterfly control valves is installed in the suction pipe of a horizontal split case pump , the backflow preventer is required to be at least 50 ft (15.2 m) from the pump suction flange (as measured along the route of pipe) in accordance with 4.16.5.4.		
Proposed Committee Text (FR):			
Proposed Statement (Substantiation):	The type of pump is irrelevant to the distance requirement. Section 4.29.3.1 applies to all pump types making this change unnecessary.		

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
New after 4.30.3.2	42		Make a motion to create first revision based on PI 42
Public Input Text (PI):	4.30.3.2.1 The requirements of 4.30.3.2 shall not apply where a site-specific seismic analysis in accordance with ASCE/SEI 7 Chapter 13 (or any recognized standards) demonstrates the equipment is adequately anchored and stable under Maximum Considered Earthquake (MCE_R) Spectral Response Acceleration Parameter.		
Proposed Committee Text (FR):	4.30.3.2.1 The requirements of 4.30.3.2 shall not apply where a site-specific seismic analysis in accordance with ASCE/SEI 7 is performed.		
Proposed Statement (Substantiation):	This revision allows the use of a qualified seismic analysis which aligns NFPA 20 with ASCE 7 and eliminates unnecessary structural over design.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
6.4.3, 6.4.4, A.6.4.4	7,12		Make a motion to accept PI 7, 12 with the following changes
Public Input Text (PI):	Sections 6.4.3, 6.4.4 6.4.3		

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	The base plate shall be securely attached to a solid reinforced concrete foundation in such a way that pump and driver shaft alignment is ensured. 6.4.4* The foundation shall be approved and sufficiently substantial to form a permanent and rigid support for the base plate. A.6.4.4 A substantial foundation is important in maintaining alignment. The foundation preferably should be made of reinforced concrete. Sometimes the foundation is referred to as a pump pad.
Proposed Committee Text (FR):	Sections 6.4.3, 6.4.4 6.4.3 The base plate shall be securely attached to a solid reinforced concrete foundation in such a way that pump and driver shaft alignment is ensured. 6.4.4* The foundation shall be approved and sufficiently substantial to form a permanent and rigid support for the base plate. A.6.4.4 A substantial foundation is important in maintaining alignment. The foundation preferably should be made of reinforced concrete. Sometimes the foundation is referred to as a pump pad.
Proposed Statement (Substantiation):	Pump installations are mounted on concrete, as well as other structures. Specific foundation requirements are required to be in accordance with the manufacturer's instructions and applicable local building codes. Adding further description to the pump foundation or pad clarifies industry terminology.

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:																								
7.3.2.1	20		Make a motion to create first revision based on PI 20																								
Public Input Text (PI):	7.3.2.1* The pump column shall be furnished in sections not exceeding a nominal length of 10 ft (3 m), shall <u>behave wall thicknesses</u> not less than <u>the weight specified in Table 7.3.2.1(a) and Table 7.3.2.1(b)</u><u>Schedule 30 in sizes 8 in. and larger or Schedule 40 in sizes less than 8 in. (200) as specified in ASTM and ASME steel pipe standards referenced in NFPA 13</u>, and shall be connected by threaded-sleeve couplings or flanges. <u>Table 7.3.2.1(a) Pump Column Pipe Weights (US Customary)</u> <table><tr><th>Nominal Size (in.)</th><th>Outside Diameter (O.D.) (in.)</th><th>Weight per Unit Length (Plain Ends) (lb/ft)</th></tr><tr><td>6</td><td>6.625</td><td>18.97</td></tr><tr><td>7</td><td>7.625</td><td>22.26</td></tr><tr><td>8</td><td>8.625</td><td>24.70</td></tr><tr><td>9</td><td>9.625</td><td>28.33</td></tr><tr><td>10</td><td>10.75</td><td>31.20</td></tr><tr><td>12</td><td>12.75</td><td>43.77</td></tr><tr><td>14</td><td>14.00</td><td>53.57</td></tr></table> <u>Table 7.3.2.1(b) Pump Column Pipe Weights (Metric)</u>			Nominal Size (in.)	Outside Diameter (O.D.) (in.)	Weight per Unit Length (Plain Ends) (lb/ft)	6	6.625	18.97	7	7.625	22.26	8	8.625	24.70	9	9.625	28.33	10	10.75	31.20	12	12.75	43.77	14	14.00	53.57
Nominal Size (in.)	Outside Diameter (O.D.) (in.)	Weight per Unit Length (Plain Ends) (lb/ft)																									
6	6.625	18.97																									
7	7.625	22.26																									
8	8.625	24.70																									
9	9.625	28.33																									
10	10.75	31.20																									
12	12.75	43.77																									
14	14.00	53.57																									

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	Nominal Size (mm) Outside Diameter (O.D.) (mm) Weight per Unit Length (Plain Ends) (kg/m) 150 200 250 300 350 161 212 264 315 360 28.230 36.758 46.431 65.137 81.209
Proposed Committee Text (FR):	7.3.2.1* The pump column shall be furnished in sections not exceeding a nominal length of 10 ft (3 m), shall be have a wall thickness not less than the weight specified in Table 7.3.2.1(a) and Table 7.3.2.1(b),<u>Schedule 30 in sized 8 inch (200 mm) and larger or Schedule 40 in sizes less than 8 inch (200 mm) as specified in ASTM and ASME steel pipe standards references in NFPA 13.</u> and shall be connected by threaded-sleeve couplings or flanges. Table 7.3.2.1(a) Pump Column Pipe Weights (US Customary) Nominal Size (in.) Outside Diameter (O.D.) (in.) Weight per Unit Length (Plain Ends) (lb/ft) 6 7 8 9 6.625 7.625 8.625 9.625 18.97 22.26 24.70 28.33

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	10	10.75	31.20
	12	12.75	43.77
	14	14.00	53.57
	Table 7.3.2.1(b) Pump Column Pipe Weights (Metric)		
	Nominal Size (mm)	Outside Diameter (O.D.) (mm)	Weight per Unit Length (Plain Ends) (kg/m)
	150	161	28.230
	200	212	36.758
	250	264	46.431
	300	315	65.137
	350	360	81.209
	Proposed Statement (Substantiation):	The proposed change is a direct reference to ASTM standards as well as NFPA13. The tables are redundant with the new text, and should be removed to avoid confusion. Also, the information on the rightmost column may not be correct.	

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Public Input Review Task Group 2 Report

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
New 6.3	55		Reject Public Input 55
Public Input Text (PI):	<u>6.3 Water Mist Centrifugal Pumps.</u>		
	<u>6.3.1 Water mist centrifugal pumping units shall be dedicated to and listed as a unit for fire protection service.</u>		
	<u>6.3.2 Where provided with a variable speed control, failure of the variable speed control feature shall cause the controller to bypass and isolate the variable speed control system.</u>		
	<u>6.3.3 Pumps for water mist systems shall have adequate capacities to meet the maximum system demand for their intended service.</u>		
	<u>6.3.4 NPSH shall exceed the pump manufacturer's required NPSH plus 5 ft (1.52 m) of liquid.</u>		
	<u>6.3.5 The inlet pressure to the pump shall not exceed the pump manufacturer's recommended maximum inlet pressure.</u>		
Proposed Committee Text (FR):	IF PI 55 is not rejected, see below.		
	<u>6.3 Water Mist Centrifugal Pumps.</u>		
	▲ <u>6.3.1 Water mist centrifugal pumping units shall be dedicated to and listed as a unit for fire protection service.</u>		
	<u>6.3.2 Where provided with a variable speed control, failure of the variable speed control feature shall cause the controller to bypass and isolate the variable speed control system.</u>		
	<u>6.3.3 Pumps for water mist systems shall have adequate capacities to meet the maximum system demand for their intended service.</u>		
	<u>6.3.4 NPSH shall exceed the pump manufacturer's required NPSH plus 5 ft (1.52 m) of liquid.</u>		

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	<u>6.3.5 The inlet pressure to the pump shall not exceed the pump manufacturer's recommended maximum inlet pressure.</u>
Proposed Statement (Substantiation):	The controller and driver requirements for Water Mist Centrifugal fire pumps are the same as other centrifugal fire pumps so there is no need to separate out any controller requirements for this type of pump. Paragraph 10.10.3.1 already covers the automatic bypass.

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.7.7.2	9		Create First Revision based on Public Input 9 with the following changes
Public Input Text (PI):	4.7.7.2* <u>Pressure-Circulation</u> relief valves and pressure-regulating devices in the fire pump installation shall not be used as a means to meet the requirements of 4.7.7.1.		
Proposed Committee Text (FR):	4.7.7.2* <u>Pressure R</u> relief valves and pressure-regulating devices in the fire pump installation shall not be used as a means to meet the requirements of 4.7.7.1.		
Proposed Statement (Substantiation):	This paragraph was added in the 2003 edition of NFPA 20 to prevent any relief valve from being used to “flatten” the curve by dumping large amounts of water. It was intended to address the relief valve as defined in 3.3.78.4 and sub-definition types, which includes the Circulation relief valve. A relief valve, with a definition, satisfies the submitters concern.		

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.8.5	43		Reject Public Input 43
Public Input Text (PI):	4.8.5 As a minimum, each variable speed drive control unit shall be provided in a National Electrical Manufacturers Association (NEMA), Type 43, watertight enclosure with an ingress protection (IP) rating of IP66IP54.		
Proposed Committee Text (FR):			
Proposed Statement (Substantiation):	The water stream at the pump can easily exceed the water testing requirement for Type 3 or IP54 or IP55. IP66 only requires 25 gal/min. for 3 min, as opposed to type 4 that requires 65 gal/min for 5 min. The motor windings are always coated so water spray does not affect them the same as sensitive micro-electronics in a VFD. If the VFD is not rated for Type 4 or IP66, it can be protected with a Type 4 enclosure and cooler. IPx4 test is approx. 1.8 gal/min, that is atomized through screen of 1/64" holes, 8" away. Type 3 requires and windblown dust test. A blast of compressed air mixed with dry talcum powder, using sand blast gun that is equipped with a 3/16 inch diameter air jet and 3/8 inch diameter nozzle. The air pressure is 90-100 psi. The nozzle is 12-15 inches from the enclosure. IP55 is the NEMA equivalent for Type 3. IPx5 test is with about a ¼" nozzle. The test water stream is in all directions. About 3 gallons per minute. The distance from nozzle to enclosure is about 10 feet.		

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	Type 4 is the hose directed spray. This is about 65 gallons/minute, for 5 minutes. The distance from nozzle to enclosure is about 10 feet. IPx6 test is with about a ½" nozzle. The test water stream is in all directions. About 25 gallons per minute, for 3 minutes. The distance from nozzle to enclosure is about 10 feet.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.27.1	19		Reject PI 19
Public Input Text (PI):	4.27.1 For pressure-actuated fire pumps, a means to maintain the pressure in the fire protection system shall be provided in accordance with one of the following: 1. A jockey pump <u>2.</u> A water mist positive displacement pumping unit in accordance with 8.5.7.2 <u>2.3.</u> A fire pump and controller assembly listed for such purpose <u>3.4.</u> Another approved means that is not the main fire pump		
Proposed Committee Text (FR):			
Proposed Statement (Substantiation):	The proposed revision did not provide enough information regarding: 1) How was this UL Listed? Was it UL to 508A, UL to 218, chapter 9, for NFPA 13D Residential Fire Pump Controllers, or UL 218 for NFPA 20 fire pump controllers? A jockey pump controller is Listed to UL508A with NEC short circuit or ground fault protection per Table 430.52. Motor overload is in accordance with 430.32(A)(1). UL 218 for 13D allows 150-250% inverse time protection, which is inline with Table 430.52, but no motor overload is provided. This is desired for NFPA 13R systems, which now require a full NFPA 20 system. I'm told this could be a 4 story building, so evacuation is an issue for handicapped residents. 13D is for 1 and 2 family dwellings or manufactured homes. These would		

	typically be 1 or 2 levels, so evacuation would be to exit as they normally would.
	2) The duty cycle of equipment with respect to a motor starting every 30-60 seconds, which is based on jockey pump field experience. Larger motors have fewer cycles per hour.
	3) The duty cycle of fire pump motor, as defined by paragraph 9.1 in UL 1004-5. This test is for 12 starts to full load for 5 minutes.
	4) The duty cycle of reduced voltage fire pump controllers, as defined by UL 218 is: 6.17.2.4 Starting resistors shall be designed to permit one 5 second starting operation in each 80 seconds for a period of not less than 1 hour. This requirement shall not apply to the transition resistors in a wye-delta closed transition controller. 6.17.2.5 A starting reactor or autotransformer shall permit one 15 second starting operation every 240 seconds for a period of not less than 1 hour. Alternately, a controller over 132 kW (200 hp) shall allow three 30 second starts separated by 30 second rest intervals in each hour for 2 hours. 6.17.2.8 Soft start units shall comply with the duty cycle requirements in accordance with 6.17.2.5.
	5) Additionally, with a simple check valve leak, at 1 minute cycles, the jockey pump would run 525,600 cycles per year, resulting in substantially reduced life expectancy of the fire pump. The motor run contacts also need to be overridden during the jockey pump load and the manual stop needs to be overridden during the jockey mode.
	6) Further, water hammer affects needs to be evaluated when starting the fire pump to fill a system, which has traditionally always done with the jockey pump.

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.27.7	40		Reject PI 40
Public Input Text (PI):	4.27.7 Except as permitted in Chapter 8 or chapter 10 , the primary or standby fire pump shall not be used as a jockey pump.		
Proposed Committee Text (FR):			
Proposed Statement (Substantiation):	Chapter 10 does not have any requirements for jockey pump panels. Also, no revisions were proposed to Chapter 10 that would add in jockey pump requirements.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION
9.5.1.5	13		Reject Public Input 13
Public Input Text (PI):	9.5.1.5* The corresponding values of locked rotor current for motors rated at other voltages shall be determined by multiplying the values shown in Table 9.5.1.1(a) by the ratio of 230 V to the voltage rating of the motor. "The enhanced content example incorrectly displays '1540' under 230V when it should read '1450' to align with Table 9.5.1.1(a). No direct code edits required."		
Proposed Committee Text (FR):			

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Proposed Statement (Substantiation):	The submitters request requires changes that are not in NFPA 20. Table 9.5.1.1(a) is correct in NFPA 20. NFPA staff will revise the content in NFPA LiNK.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
New A.9.6.2.1	3		Create First Revision based on Public Input 3 with the following changes
Public Input Text (PI):	9.6.2.1 [*] On-site standby generator systems shall comply with Section 9.4 and shall meet the requirements of Level 1, Type 10, Class X systems of NFPA 110. <u>A.9.6.2.1</u> <u>It should be noted that the reference to Type 10 indicates the maximum time, in seconds, that the EPSS will permit the load terminals of the transfer switch to be without acceptable electrical power. In the case of a fire pump assembly, the fire pump controller should have power within 10 seconds. There may be an additional period of time associated with the fire pump controller actually providing power to the fire pump.</u>		
Proposed Committee Text (FR):	9.6.2.1 [*] On-site standby generator systems shall comply with Section 9.4 and shall meet the requirements of Level 1, Type 10, Class X systems of NFPA 110. <u>A.9.6.2.1</u> <u>It should be noted that the reference to Type 10 indicates the maximum time, in seconds, that the alternate power source will permit the load terminals of the transfer switch to be without acceptable electrical power. In the case of a fire pump assembly, the fire pump controller should have power within 10 seconds after loss of normal power. There may be an additional period of time</u>		

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	associated with the fire pump controller actually providing power to the fire pump as allowed by this standard.
Proposed Statement (Substantiation):	TG2 agrees with the submitters substantiation. Added additional wording for further clarity. -TG2 removed the EPSS reference since it is not used in the body of NFPA 20.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
New after 9.6.2.2	1		Reject Public Input 1
Public Input Text (PI):	Multiple Generator Systems Generators are allowed to shut down or be taken offline based on generator alarms and warnings when the following are met: There are multiple generators in the system. Each generator can meet the requirements of this section. The available system capacity is monitored to ensure there is capacity to operate the fire pump. The generator can shed loads or restart offline generators automatically to ensure available capacity to run the fire pump. When the minimum number of generators are online to run the fire pump, the generators will operate as described in 9.6.2.2		
Proposed Committee Text (FR):			

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Proposed Statement (Substantiation):	NFPA 20, paragraph 9.6.2.1 references NFPA 110 for the requirements of the On-site standby generator systems. It shall comply with Section 9.4 and shall meet the requirements of Level 1, Type 10, Class X systems of NFPA 110. Multiple generator requirements are covered in chapter 8 of NFPA 110.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
10.1.2.6	26		Create First Revision based on Public Input 26 with the following changes
Public Input Text (PI):	10.1.2.6 Service Arrangements. It shall be the responsibility of the pump manufacturer or its designated representative to make necessary arrangements for the services of a <u>controller</u> manufacturer's representative <u>or qualified person</u> , when needed, for service and adjustment of the equipment during the installation, testing, and warranty periods.		
Proposed Committee Text (FR):	10.1.2.6 Service Arrangements. It shall be the responsibility of the pump manufacturer, or its designated representative, to make necessary arrangements for the services of a controller <u>through the</u> manufacturer's representative <u>or qualified service person</u> , where needed. <u>This arrangement is</u> for services and adjustments of the equipment during the installation, testing, and warranty periods.		
Proposed Statement (Substantiation):	The standard is limiting in that qualified service personnel other than controller manufacturer representatives could also be contacted for services and adjustment of equipment during installation. The change allows the addition of a qualified person in accordance with 3.3.54.		

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
10.4.1.4	14		Create a First Revision based on the following Committee text
Public Input Text (PI):	10.4.1.4 The requirements of 10.4.1.1 and 10.4.1.2 shall not apply where the controller can withstand without damage a 10 kV impulse in accordance with IEEE C62.41, <i>IEEE Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits</i>, or where the controller is listed to withstand surges and impulses in accordance with UL 1449, <i>Surge Protective Devices</i>. <u>Controller shall be provided with a listed surge protective device (SPD) installed in or on the fire pump controller as required by NFPA 70, 695.15.</u>		
Proposed Committee Text (FR):	10.4.1* Voltage Surge ArresterProtection. A.10.4.1 Operation of the surge arrester should not cause either the isolating switch or the circuit breaker to open. Arresters in IEEE C62.11, <i>IEEE Standard for Metal-Oxide Surge Arresters for AC Power Circuits (>1 kV)</i>, are normally zinc-oxide without gaps. 10.4.1.1 <u>The surge arrester or surge protection device (SPD) shall be rated to suppress voltages above line voltage in by either 10.4.1.2 or 10.4.1.3.</u> <u>10.4.1.2</u> Unless the requirements of 10.4.1.3 or 10.4.1.4 are met, a voltage surge arrester complying with IEEE C62.1, IEEE Standard for Gapped Silicon Carbide Surge Arresters for AC Power Circuits, or IEEE C62.11, <i>IEEE Standard for Metal-Oxide Surge Arresters for AC Power Circuits (>1 kV)</i>, shall be installed from each phase to ground. (See 10.3.3.4.) 10.4.1.2 The surge arrester shall be rated to suppress voltage surges above line voltage. 10.4.1.3 <u>A listed Type 1 SPD in accordance with UL 1449, <i>Surge Protective Devices</i>, shall be installed from each phase to ground. (See 10.3.3.4.)</u> <u>10.4.1.4</u>		

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	The requirements of 10.4.1.1 and 10.4.1.2 shall not apply to controllers rated in excess of 600 V. (See Section 10.6.) 10.4.1.54 The requirements of 10.4.1.1 and 10.4.1.2 shall not apply where the controller can withstand without damage a 10 kV impulse in accordance with IEEE C62.41, <i>IEEE Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits</i>, or where the controller is listed to withstand surges and impulses in accordance with UL 1449; <i>Surge-Protective Devices</i>.
Proposed Statement (Substantiation):	Re-write the entire section for clarity. Voltage Surge Protection can be accomplished by the use of a surge arrester in accordance with <i>IEEE C62.11</i> or an SPD in accordance with <i>UL 1449, Surge Protective Devices</i>. If the controller can withstand without damage a 10 kV impulse in accordance with IEEE C62.41, additional surge protection is not required. Note, C62.1 has been withdrawn so it was removed as a reference.

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
10.4.2.5	27		Create First Revision based on Public Input 27 with the following changes
Public Input Text (PI):	10.4.2.5 Operating Handle. 10.4.2.5.1 The isolating switch and the circuit breaker shall be permitted to be interlocked so that the isolating switch can neither be opened nor closed while the circuit breaker is closed. 10.4.2.5.2 Where the isolating switch is not interlocked in accordance with 10.4.2.5.1, the operating handle shall be provided with a spring latch that shall be arranged so that it requires the use of the other hand to hold the latch released in order to permit the opening or closing of the switch. <u>10.4.2.5.3</u> <u>Where the isolating switch complies with 10.4.2.1.2, the two-hand operation according to 10.4.2.5.2 is not required.</u>		
Proposed Committee Text (FR):	10.4.2.5 Operating Handle. 10.4.2.5.1 The isolating switch and the circuit breaker shall be permitted to be interlocked so that the isolating switch can neither be opened nor closed while the circuit breaker is closed. 10.4.2.5.2 Where the isolating switch is not interlocked in accordance with 10.4.2.5.1, the operating handle shall be provided with a spring latch that shall be arranged so that it requires the use of the other hand to hold the latch released in order to permit the opening or closing of the switch.		

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	<u>10.4.2.5.3.2.1</u> <u>Where the isolating switch complies with 10.4.2.1.2, the two-hand operation in accordance with according to 10.4.2.5.2 is shall not be required.</u>
Proposed Statement (Substantiation):	Two hand operation is required to prevent the inadvertent operation of the isolating switch when it is not rated to open the locked rotor motor currents. When the isolating switch is in compliance with 10.4.2.1.2, it is suitable for interrupting the motor locked rotor current, so the order of operation is no longer important. Made the paragraph an exception by changing the paragraph number to 10.4.2.5.2.1.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
10.4.5.4.1, 10.4.5.4.2	54		Reject Public Input 54
Public Input Text (PI):	10.4.5.4 Starting Reactors and Autotransformers. 10.4.5.4.1 Starting reactors and autotransformers shall comply with the requirements of Table 113.1 of UL 508, <i>Industrial Control Equipment</i> . 10.4.5.4.2 Starting reactors and autotransformers over 200 hp shall be permitted to be designed to Table 113.1, Part 3, of UL 508, <i>Industrial Control Equipment</i> , in lieu of Table 113.1, Part 4.		
Proposed Committee Text (FR):			

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Proposed Statement (Substantiation):	This is the exact wording in a TIA for the 2025 edition of NFPA 20, so no changes need to be made.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
10.5.2.1.3.2	28, 32		Create First Revision based on Public Input 28 and 32 without changes
Public Input Text (PI):	10.5.2.1.3.2* Where an electronic pressure sensor is used to control fire pump operation, the fire pump controller shall monitor and provide an audible and visual signal for the following conditions: - Any time the electronic pressure sensor output is less <u>more</u> than 10 percent of rated span or below its rated zero pressure output - Any time the electronic pressure sensor <u>reading-output</u> is more than 10 percent above its rated full-scale output A.10.5.2.1.3.2 The purpose of monitoring the pressure reading from a pressure transducer is to detect and correct a transducer that is operating outside of the expected pressure range. <u>For example, using a 4-20 mA transducer, anytime the output is less than 3.6 mA or more than 22 mA, the alarm will activate.</u>		
Proposed Committee Text (FR):	10.5.2.1.3.2* Where an electronic pressure sensor is used to control fire pump operation, the fire pump controller shall monitor and provide an audible and visual signal for the following conditions:		

	1. Any time the electronic pressure sensor output is less<u>more</u> than 10 percent of rated span or below its rated zero pressure output 2. Any time the electronic pressure sensor reading<u>output</u> is more than 10 percent above its rated full-scale output A.10.5.2.1.3.2 The purpose of monitoring the pressure reading from a pressure transducer is to detect and correct a transducer that is operating outside of the expected pressure range. <u>For example, using a 4-20 mA transducer, anytime the output is less than 3.6 mA or more than 22 mA, the alarm will activate.</u>
Proposed Statement (Substantiation):	PI 28: The presently published requirement is incorrect and can lead to nuisance alarms without any actual problem with the sensor. Electronic transducers have a rated output range that has a maximum and minimum. If the transducer is above or below this range, an alarm is to be activated. If the output is 10% greater than the rated output, something is wrong with the transducer. Also, if the output is 10% below its zero output rating, something is wrong as well. On a typical 4-20 mA transducer, 4 mA is the rated zero output and 20 mA is the rated full-scale output, so if the reading is 10% below 4 mA, or if the reading is 10% above 20 mA, a problem exists other than tolerance. See companion NEMA PI to revise A.10.5.2.1.3.2 to add an example. PI 32: In conjunction with the Public Input 28, the proposed text revisions provides an example of how to calculate the alarm settings.

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
12.1.4	29		Create First Revision based on Public Input 29 with the following changes
Public Input Text (PI):	12.1.4 It shall be the responsibility of the pump manufacturer or its designated representative to make necessary arrangements for the services of a controller manufacturer's representative, where or <u>qualified service person when</u> needed, for services and adjustment of the equipment during the installation, testing, and warranty periods.		
Proposed Committee Text (FR):	12.1.4 It shall be the responsibility of the pump manufacturer, <u>or its</u> designated representative, <u>to make necessary arrangements for the services of a controller through the manufacturer's representative or qualified service person, where needed.</u> This arrangement is for services and adjustments of the equipment during the installation, testing, and warranty periods.		
Proposed Statement (Substantiation):	The standard is limiting in that qualified service personnel other than controller manufacturer representatives could also be contacted for services and adjustment of equipment during installation.- The change allows the addition of a qualified person in accordance with 3.3.54.		

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
12.4.1.4	30, 33		Create First Revision based on Public Input 30 and 33 with the following changes
Public Input Text (PI):	12.4.1.4 Separate visible indicators and a common audible signal capable of being heard while the engine is running and operable in all positions of the main switch except the off position shall be provided to immediately indicate the following conditions: 1. *Battery failure or missing battery, as follows: 1. Each controller shall be provided with a separate visible indicator for each battery. 2. The battery failure signal shall initiate at no lower than two-thirds of battery nominal voltage rating (8.0 V dc on a 12 V dc system). 3. The battery failure signal shall also initiate when the battery is missing, with or without the battery charger being energized. 4. Sensing shall be delayed to prevent nuisance signals. 2. Battery charger failure, as follows: 1. Each controller shall be provided with a separate visible indicator for battery charger failure. 2. The audible signal for battery charger failure shall not be required. 3. Low air or hydraulic pressure, as follows: 1. Where air or hydraulic starting is provided (see 11.2.7.4), each air supply container shall be provided with separate visible indicators to indicate low pressure.		

	2. Where hydraulic starting is provided (<i>see 11.2.7.3</i>), each hydraulic accumulator system shall be provided with separate visible indicators to indicate low pressure. 4. System overpressure, for engines equipped with variable-speed pressure-limiting controls, to actuate at 115 percent of set pressure 5. ECM selector switch in alternate ECM position (only for engines with ECM control) 6. *Common ECM alarm for fuel injection malfunction (only for engines with ECM control <i>see 11.2.4.2.6.1</i>) 7. Low fuel level signal at two-thirds tank capacity 8. Low engine temperature 9. Supervisory signal for interstitial space liquid intrusion 10. Fuel maintenance needed if automatic fuel maintenance system is provided 11. ECM warning (only for engines with ECM control) 12. Low cooling water flow 13. Pressures exceeding those for rated components 14. Low reservoir level (<i>see 12.7.2.7.4</i>) 15. Lowest permissible suction pressure (<i>see 12.7.2.7.4</i>) A.12.4.1.4(6) The signal provided is from a common alarm <i>the electronic controlled engine (ECM) in accordance with 11.2.4.2.6.1</i> and the indication of the type of trouble happening should be indicated on the engine.
Proposed Committee Text (FR):	12.4.1.4 Separate visible indicators and a common audible signal capable of being heard while the engine is running and operable in all

	positions of the main switch except the off position shall be provided to immediately indicate the following conditions: 1. *Battery failure or missing battery, as follows: 1. Each controller shall be provided with a separate visible indicator for each battery. 2. The battery failure signal shall initiate at no lower than two-thirds of battery nominal voltage rating (8.0 V dc on a 12 V dc system). 3. The battery failure signal shall also initiate when the battery is missing, with or without the battery charger being energized. 4. Sensing shall be delayed to prevent nuisance signals. 2. Battery charger failure, as follows: 1. Each controller shall be provided with a separate visible indicator for battery charger failure. 2. The audible signal for battery charger failure shall not be required. 3. Low air or hydraulic pressure, as follows: 1. Where air or hydraulic starting is provided (see 11.2.7.4), each air supply container shall be provided with separate visible indicators to indicate low pressure. 2. Where hydraulic starting is provided (see 11.2.7.3), each hydraulic accumulator system shall be provided with separate visible indicators to indicate low pressure. 4. System overpressure, for engines equipped with variable-speed pressure-limiting controls, to actuate at 115 percent of set pressure
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	5. ECM selector switch in alternate ECM position (only for engines with ECM control) 6. *Common trouble signal alarm for fuel injection malfunction (only for engines with ECM control see 11.2.4.2.6.1) 7. Low fuel level signal at two-thirds tank capacity 8. Low engine temperature 9. Supervisory signal for interstitial space liquid intrusion 10. Fuel maintenance needed if automatic fuel maintenance system is provided 11. ECM warning (only for engines with ECM control) 12. Low cooling water flow 13. Pressures exceeding those for rated components 14. Low reservoir level (see 12.7.2.7.4) 15. Lowest permissible suction pressure (see 12.7.2.7.4) A.12.4.1.4(6) The signal provided is from a common alarm the electronic control module (ECM) in accordance with 11.2.4.2.6.1 and the indication of the type of trouble happening should be indicated on the engine.
Proposed Statement (Substantiation):	12.4.1.4 (6) is now a common trouble signal per 11.2.4.2.6.1. It was originally a single Fuel Injection Malfunction alarm. A.12.4.1.4(6) did not define what the common signals are. The proposed revision clarifies the term “common signal” in accordance with 11.2.4.2.6.1.

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
12.7.2.1.3.2	31		Create First Revision based on Public Input 31
Public Input Text (PI):	12.7.2.1.3.2* Where an electronic pressure sensor is used to control fire pump operation, the fire pump controller shall monitor and provide a visual and audible signal that can be silenced for the following conditions: - Any time the electronic pressure sensor output is less <u>more</u> than 10 percent of rated span or below its rated zero pressure output - Any time the electronic pressure sensor <u>reading-output</u> is more than 10 percent above its rated full-scale output		
Proposed Committee Text (FR):	12.7.2.1.3.2* Where an electronic pressure sensor is used to control fire pump operation, the fire pump controller shall monitor and provide a visual and audible signal that can be silenced for the following conditions: - Any time the electronic pressure sensor output is less <u>more</u> than 10 percent of rated span or below its rated zero pressure output - Any time the electronic pressure sensor <u>reading-output</u> is more than 10 percent above its rated full-scale output		
Proposed Statement (Substantiation):	The presently published requirement is incorrect and can lead to nuisance alarms without any actual problem with the sensor. Electronic transducers have a rated output range that has a maximum and minimum. If the transducer is above or below this		

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	range, an alarm is to be activated. If the output is 10% greater than the rated output, something is wrong with the transducer. Also, if the output is 10% below its zero output rating, something is wrong as well. On a typical 4-20 mA transducer, 4 mA is the rated zero output and 20 mA is the rated full-scale output, so if the reading is 10% below 4 mA, or if the reading is 10% above 20 mA, a problem exists other than tolerance.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
A.12.7.2.1.3	37		Create First Revision based on PI-37
Public Input Text (PI):	A.12.7.2.1.3 The purpose of monitoring pressure readings from a pressure transducer is to detect and correct a transducer that is operating outside of the expected pressure range. For example, using a 4-20 mA transducer, anytime the output is less than 3.6 mA or more than 22 mA, the alarm will activate.		
Proposed Committee Text (FR):	A.12.7.2.1.3.2 When the solenoid valve drain opens, the restricting orifice in the pressure sensing line will keep the pressure at the transducer near zero while the solenoid valve is open. This is the time when the transducer can be verified to be less than 10 psi. For example, using a 4-20 mA transducer, anytime the output is less than 3.6 mA or more than 22 mA, the alarm will activate.		
Proposed Statement (Substantiation):	This revised annex paragraph provides an example of how to calculate the alarm settings.		

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
12.7.2.1.3			Create First Revision
Public Input Text (PI):			
Proposed Committee Text (FR):	12.7.2.1.3 * Where an electronic pressure sensor is used to automatically control fire pump operation, the fire pump controller shall monitor the electronic pressure sensor during automatic testing. A.12.7.2.1.3 [move from A.12.7.2.1.3.1] The purpose of monitoring pressure readings from a pressure transducer is to detect and correct a transducer that is operating outside of the expected pressure range. The purpose of monitoring the pressure transducer is to detect whether a transducer has drifted upwardly over time from zero. A transducer that drifts downwardly will automatically cause the fire pump to start when it drifts below the start set point. 12.7.2.1.3.1 * Where the electronic pressure sensor reading exceeds the higher of 10 psi (0.68 bar) or 3.33 percent of the controller's maximum rated pressure during any automatic pump start that was initiated by the solenoid drain valve, as required by 12.7.2.7.3, the controller shall activate a visual and audible signal that can be silenced. A.12.7.2.1.3.1 [move from A.12.7.2.1.3.2] The purpose of monitoring the pressure transducer is to detect whether a transducer has drifted upwardly over time from zero. A transducer that drifts downwardly will automatically cause the fire pump to start when it drifts below the start set point. When the solenoid valve drain opens, the restricting orifice in the pressure sensing line will keep the pressure at the transducer near zero while the solenoid valve is open. This is the time when the transducer can be verified to be less than 10 psi. 12.7.2.1.3.2 * Where an electronic pressure sensor is used to control fire pump operation, the fire pump controller shall monitor and provide a visual and audible signal that can be silenced for the following conditions: (1) Any time the electronic pressure sensor output is less than 10 percent of rated span or below its rated zero pressure output (2) Any time the electronic pressure sensor reading is more than 10 percent above its rated full-scale output A.12.7.2.1.3.2 [move from A.12.7.2.1.3] When the solenoid valve drain opens, the restricting orifice in the pressure sensing line will keep the pressure at the transducer near zero while the solenoid valve is open. This is the time when the transducer can be verified to be less than 10 psi. The purpose of		

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	monitoring pressure readings from a pressure transducer is to detect and correct a transducer that is operating outside of the expected pressure range.
Proposed Statement (Substantiation):	An error was discovered in A.12.7.2.1.3, A.12.7.2.1.3.1, and A.12.7.2.1.3.2. These three paragraphs should be equivalent to A.10.5.2.1.3, A.10.5.2.1.3.1, and A.10.5.2.1.3.2. This revision corrects the order of the Chapter 12 annex sections.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
14.2.6.8.1	52		Create First Revision based on Public Input 52 with the following changes
Public Input Text (PI):	14.2.6.8.1 When dry charge batteries have been supplied, electrolyte shall be added to the batteries and charged for a minimum of 24 hours prior to connecting to the time the engine is to be started and the batteries given a conditioning charge.		
Proposed Committee Text (FR):	14.2.6.8.1 When dry charge batteries have been supplied, electrolyte shall be filled, if needed, then charged by a fire pump controller or other appropriately rated chargers added to the batteries for a minimum of 24 hours prior to the time cranking the engine is to be started and the batteries given a conditioning charge.		
Proposed Statement (Substantiation):	The batteries shall complete the 24-hour charge sequence prior to cranking the engine to prevent damage to the batteries. The diesel fire pump controller is one way to charge the batteries if connected in the OFF position in advance with AC power on.		

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
A.9.3.1(1)	51		Create First Revision based on Public Input 51 with the following changes.
Public Input Text (PI):	A.9.3.1(1) A reliable power source possesses the following characteristics: 1. The source power plant has or <u>transmission lines have</u> not experienced any shutdowns longer than 10 continuous hours in the year prior to plan submittal. NFPA 25 requires special undertakings (i.e., fire watches) when a water-based fire protection system is taken out of service for longer than 10 hours. If the normal source power plant has or <u>transmission lines have</u> been intentionally shut down for longer than 10 hours in the past, it is reasonable to require a backup source of power. 2. Power outages have not routinely been experienced <u>exceeded 10 continuous hours</u> in the <u>year prior to plan submittal in the</u> area of the protected facility caused by failures in generation or transmission. This standard does not require that the normal source of power be infallible to deem the power reliable, nor does it intend to require a backup source of power for every installation using an electric-motor-driven fire pump. 3. The normal source of power is not supplied by overhead conductors outside the protected facility. Fire departments responding to an incident at the protected facility will not operate aerial apparatus near live overhead power lines, without exception. A backup source of power is required in case this scenario occurs and the normal source of power must be shut off. Additionally, many utility providers will remove power to the protected facility by physically cutting the overhead conductors. If the normal source of power is provided by overhead conductors, which will not be		

	identified, the utility provider could mistakenly cut the overhead conductor supplying the fire pump. 4. Only the disconnect switches and overcurrent protection devices permitted by 9.2.3 are installed in the normal source of power. Power disconnection and activated overcurrent protection should occur only in the fire pump controller. The requirements of 9.2.2 for the disconnect switch and overcurrent protection essentially require disconnection and overcurrent protection to occur in the fire pump controller. If unanticipated disconnect switches or overcurrent protection devices are installed in the normal source of power that do not meet the requirements of 9.2.2, the normal source of power must be considered not reliable and a backup source of power is necessary. Typical methods of routing power from the source to the motor are shown in Figure A.9.2. Other configurations are also acceptable. The determination of the reliability of a service is left up to the discretion of the authority having jurisdiction. For more information on the determination of reliability, see the following publications: 1. IEEE 493, <i>IEEE Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems</i> 2. "Reliability engineering applied to Critical Operations Power Systems (COPS)," <i>2011 IEEE Industrial and Commercial Power Systems Conference (I&CPS)</i> 3. "Reliability Analysis for Power to Fire Pump Using Fault Tree and RBD," <i>IEEE Transactions on Industry Applications</i> 4. "Risk Analysis for NEC Article 708 Critical Operations Power Systems," 2009 Industry Applications Society Annual Meeting, published by IEEE 5. "NEC Article 708," <i>IEEE Industry Application Magazine</i>, January-February 2011
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Proposed Committee Text (FR):	A.9.3.1(1) A reliable power source possesses the following characteristics: 5. The source power plant has or transmission distribution lines <u>have</u> not experienced any shutdowns longer than 10 continuous hours in the year prior to plan submittal. NFPA 25 requires special undertakings (i.e., fire watches) when a water-based fire protection system is taken out of service for longer than 10 hours. If the normal source power plant has or transmission distribution lines <u>have</u> been intentionally shut down for longer than 10 hours in the past, it is reasonable to require a backup source of power. 6. Power outages have not routinely been experienced <u>exceeded 10 continuous hours</u> in the <u>year prior to plan submittal in the</u> area of the protected facility caused by failures in generation or transmission distribution. This standard does not require that the normal source of power be infallible to deem the power reliable, nor does it intend to require a backup source of power for every installation using an electric-motor-driven fire pump. 7. The normal source of power is not supplied by overhead conductors outside the protected facility. Fire departments responding to an incident at the protected facility will not operate aerial apparatus near live overhead power lines, without exception. A backup source of power is required in case this scenario occurs and the normal source of power must be shut off. Additionally, many utility providers will remove power to the protected facility by physically cutting the overhead conductors. If the normal source of power is provided by overhead conductors, which will not be identified, the utility provider could mistakenly cut the overhead conductor supplying the fire pump. 8. Only the disconnect switches and overcurrent protection devices permitted by 9.2.3 are installed in the normal source of power. Power disconnection and activated overcurrent protection should occur only in the fire pump controller. The requirements of 9.2.2 for the disconnect switch and
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	overcurrent protection essentially require disconnection and overcurrent protection to occur in the fire pump controller. If unanticipated disconnect switches or overcurrent protection devices are installed in the normal source of power that do not meet the requirements of 9.2.2, the normal source of power must be considered not reliable and a backup source of power is necessary. Typical methods of routing power from the source to the motor are shown in Figure A.9.2. Other configurations are also acceptable. The determination of the reliability of a service is left up to the discretion of the authority having jurisdiction. For more information on the determination of reliability, see the following publications: 6. IEEE 493, <i>IEEE Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems</i> 7. "Reliability engineering applied to Critical Operations Power Systems (COPS)," <i>2011 IEEE Industrial and Commercial Power Systems Conference (I&CPS)</i> 8. "Reliability Analysis for Power to Fire Pump Using Fault Tree and RBD," <i>IEEE Transactions on Industry Applications</i> 9. "Risk Analysis for NEC Article 708 Critical Operations Power Systems," 2009 Industry Applications Society Annual Meeting, published by IEEE "NEC Article 708," <i>IEEE Industry Application Magazine</i>, January-February 2011
Proposed Statement (Substantiation):	Transmission implies high voltage, long lines. -The four IEEE references noted in the public input refer to a distribution system.

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
A.10.8.2	16		Create First Revision based on Public Input 16 without changes
Public Input Text (PI):	A.10.8.2 The compartmentalization <u>compartmentation</u> or separation is to prevent propagation of a fault in one compartment to the source in the other compartment.		
Proposed Committee Text (FR):	A.10.8.2 The compartmentalization <u>compartmentation</u> or separation is to prevent propagation of a fault in one compartment to the source in the other compartment.		
Proposed Statement (Substantiation):			

Public Input Review Task Group 4

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
	8		Create first revision
Public Input Text (PI):	Remove the word "safety" from the phrase "safety relief valve" or replace the word "safety" with the appropriate adjective (such as main relief valve or circulation relief valve). In lieu of this, provide a definition for "safety relief valve".		
Committee Text (FR):	<u>3.3.78.4.3 Safety Relief Valve</u> <u>A relief valve designed to prevent over-pressurization from positive displacement pumps.</u>		
Statement (Substantiation):	Safety relief valve is currently not defined by the standard. This revision clarifies that 'safety relief valve' is the correct term for pressure control for positive displacement pumps.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
8.5.2.2	10		Create first revision based on PI-10
Public Input Text (PI):	8.5.2.2 The <u>pressure-main</u> relief valve shall be set such that the pressure required to discharge the rated pump capacity is at or below the lowest rated pressure of any component.		
Committee Text (FR):	8.5.2.2		

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	The pressure <u>safety</u> relief valve shall be set such that the pressure required to discharge the rated pump capacity is at or below the lowest rated pressure of any component.
Statement (Substantiation):	Safety relief valve is the correct term for pressure control for positive displacement pumps.

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Public Input Review Task Group 5 Report

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
11.1	21		Create a first revision based on PI 21
Public Input Text (PI):	11.1 General. 11.1.1 This chapter provides requirements for minimum performance of diesel engine drivers. <u>11.1.1.1</u> <u>Diesel engine drivers and their associated equipment shall not be required to comply with NFPA 37 where the requirements of this chapter are met.</u> 11.1.2 Accessory devices, such as monitoring and signaling means, are included where necessary to ensure minimum performance of the aforementioned equipment. 11.1.3* Engine Type. 11.1.3.1 Diesel engines for fire pump drive shall be of the compression ignition type. 11.1.3.2 Spark-ignited internal combustion engines shall not be used.		

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Proposed Committee Text (FR):	<u>11.1.1.1</u> <u>Diesel engine drivers and their associated equipment shall not be required to comply with NFPA 37 where the requirements of this chapter are met.</u>
Proposed Statement (Substantiation):	Where requirements within NFPA37 are in conflict with NFPA20, looking to add clarity within NFPA20 as to which standard to follow.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
New after 11.2.2.6	44, 45		Resolve PI's 44 and 45
Public Input Text (PI):	<u>Deducting power from engine horsepower rating for ancillary driven equipment</u> <u>11.2.2.7 For ancillary equipment driven by the fire pump driver the ancillary equipment's power loss shall be deducted from the engine horsepower rating.</u> 11.2.2. <u>8</u> 7 After the requirements of 11.2.2.1 through 11.2.2. <u>7</u> 6 have been complied with, engines shall have a 4-hour minimum horsepower rating equal to or greater than the brake horsepower required to drive the pump at its rated speed under any conditions listed for environmental conditions under pump load.		
Proposed Committee Text (FR):			

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Proposed Statement (Substantiation):	Submitter has decided to withdraw revisions during task group meeting.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
11.2.4.3.5.3	46, 47		Create a first revision on PI's 46 and 47
Public Input Text (PI):	11.2.4.3.5.3 * _ For pressure-limiting control, a sensing line shall be installed from a connection between the pump discharge flange and the discharge check valve to the engine. <u>ADDITION OF AIR RELEASE VALVE TO VARIABLE SPEED PRESSURE LIMITING CONTROL WITH A VERTICAL TURBINE PUMP</u> <u>A.11.2.4.3.5.3</u> <u>If the discharge pressure sensing line is installed to control variable speed with a vertical turbine pump, it may be necessary to add an air release valve at the end of the line to relieve any trapped air.</u>		
Proposed Committee Text (FR):	11.2.4.3.5.5 <u>If the discharge pressure sensing line is installed to control variable speed with a vertical turbine pump, an air release valve at the end of the line to relieve any trapped air shall be installed.</u>		
Proposed Statement (Substantiation):	The VSPLC sensing line can fill with air when a diesel driven vertical turbine pump comes to a stop and the water falls down due to gravity.- This air would be trapped during the next start up and could become a compressible spring in the sensing line causing engine instability.- The task group decided to move this from the		

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	annex as proposed to the body of the standard as it is likely to occur on all vertical turbine VSPLC installations.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
11.2.7.3.8	50		Create a first revision based on PI 50
Public Input Text (PI):	11.2.7.3.8 Engine <u>Where used as the primary cranking system, engine</u> driven means shall be provided to recharge the hydraulic system when the engine is running.		
Proposed Committee Text (FR):	11.2.7.3.8 Engine <u>Where used as the primary cranking system, engine</u> driven means shall be provided to recharge the hydraulic system when the engine is running.		
Proposed Statement (Substantiation):	This harmonizes the text with the balance of the standard, specifically section 11.2.7.4.4.10.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
11.2.7.4.4.9	49		Create a first revision based on PI 49
Public Input Text (PI):	11.2.7.4.4.9		

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	Where used as a primary cranking system, there shall be an air compressor driven by the fire pump engine.
Proposed Committee Text (FR):	
Proposed Statement (Substantiation):	Text is redundant and already exists in section 11.2.7.4.4.10.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
11.4.1.3.1	22		Resolve PI 22
Public Input Text (PI):	11.4.1.3.1 Fuel supply tank(s) shall be sized for a minimum of 12 <u>8</u> hours of engine run time based on the fuel consumption rate requirements of the engine as indicated on the manufacturer's published data, plus 5 percent volume for expansion and 5 percent volume for sump.		
Proposed Committee Text (FR):			
Proposed Statement (Substantiation):	Group would like to ensure that there is enough fuel on site for a full duration run while the tank is at 2/3rds full plus 5% sump volume. -The extra tank capacity also supports commercial minimum refill volumes that could be enforced by fuel suppliers.		

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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
11.4.1.4.3.1	2		Create a first revision based on PI 2
Public Input Text (PI):	11.4.1.4.3.1 For situations where fuel tanks in excess of 1320 gal (4996 L) are being used, <u>applicable</u> the requirements of <u>Chapter 6 of</u> NFPA 37 shall apply.		
Proposed Committee Text (FR):	11.4.1.4.3.1 For situations where fuel tanks in excess of 1320 gal (4996 L) are being used, <u>applicable</u> the requirements of <u>Chapter 6 of</u> NFPA 37 shall apply.		
Proposed Statement (Substantiation):	Chapter 6 of NFPA 37 describes the requirements for a liquid fuel supply in excess of 1320 gallons which is beyond the tank capacity covered in NFPA 20 per 11.4.1.4.3.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
11.4.4.2	5		Create a first revision based on PI 5
Public Input Text (PI):	11.4.4.2 Fuel piping shall not be galvanized <u>black</u> steel or copper <u>stainless steel pipe and fittings</u> .		
Proposed Committee Text (FR):	11.4.4.2		

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	Fuel <u>supply and return</u> piping shall not be galvanized <u>black</u> steel <u>pipe, or copper stainless steel pipe, and fittings</u> . <u>or comply with section 11.4.4.1.</u>
Proposed Statement (Substantiation):	This revision ensures that a flame resistant and robust plumbing system is installed.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
11.4.4.2.1			Task group would like to create a first revision
Public Input Text (PI):			
Proposed Committee Text (FR):	11.4.4.2.1 Where <u>black</u> steel pipe is used for fuel piping, the fittings shall be steel or malleable iron fittings. <u>not be of dissimilar material or cast iron.</u>		
Proposed Statement (Substantiation):	With the changes to 11.4.4.2 to specifically call out black steel or stainless steel pipe, a change is required to section 11.4.4.2.1 not to allow mixing of steel and stainless steel pipe and fittings in a fuel plumbing system in an effort to prevent failure due to galvanic corrosion.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
New after 11.6.6.2	48		Resolve PI 48

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Public Input Text (PI):	<u>DIESEL FIRE PUMP DRIVER SHALL RUN AT RATED POWER WITH ALARMS, WARNINGS, OR FAILED SENSORS, WITH THE EXCEPTION OF OVERSPEED</u> <u>11.6.6.3</u> <u>The diesel fire pump driver shall run and continue to produce rated nameplate power without shutdown or derate for alarms and warnings or failed engine sensors, except for overspeed shutdown.</u>
Proposed Committee Text (FR):	
Proposed Statement (Substantiation):	This requirement is covered within UL1247 and FM1333.

NFPA 20 PI Review Task Group 6 Report

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
	8		Move to create a first revision based on PI#8 with the following changes as shown.
Public Input Text (PI):	Remove the word "safety" from the phrase "safety relief valve" or replace the word "safety" with the appropriate adjective (such as main relief valve or circulation relief valve). In lieu of this, provide a definition for "safety relief valve".		
Proposed Committee Text (FR):	14.2.6.4.2 The fire protection system shall be isolated and the pressure -main relief valve closed for the rated speed tests required in 14.2.6.4.1.1.		
Proposed Statement (Substantiation):	This revision adds the term "main" before relief valve and clarifies to which relief valve the requirement applies. In this section, the requirement applies to the main relief valve, which for the rated speed test must be closed.		

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
	8		Move to create a first revision based on PI#8 with the following changes as shown.
Public Input Text (PI):	Remove the word "safety" from the phrase "safety relief valve" or replace the word "safety" with the appropriate adjective (such as main relief valve or circulation relief valve). In lieu of this, provide a definition for "safety relief valve".		
Proposed Committee Text (FR):	14.2.6.4.3 The fire protection system shall be open and the <u>main</u> relief valve set for the variable speed tests required in 14.2.6.4.1.		

Proposed Statement (Substantiation):	This revision adds the term “main” before relief valve and clarifies to which relief valve the requirement applies. In this section, the requirement applies to the main relief valve, which for the variable speed test must be opened and adjusted during the test.
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SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:																																
14.1.1	23		Move to Reject PI#23																																
Public Input Text (PI):	14.1.1* Flushing. 14.1.1.1 Underground portions of suction piping shall be flushed in accordance with NFPA 24at a flow rate not less than indicated in Table 14.1.1.1 or at the hydraulically calculated water demand rate of the system, whichever is greater. Table 14.1.1.1 Minimum Flow Rates for Flushing Suction Piping <table> <tr> <th>Nominal Pipe Size (in.)</th><th>Flow rate (gpm)</th><th>Nominal Pipe Size (mm)</th><th>Flow Rate (L/min)</th></tr> <tr> <td>1</td><td>37</td><td>25</td><td>140</td></tr> <tr> <td>1 1/2</td><td>85</td><td>38</td><td>330</td></tr> <tr> <td>2</td><td>150</td><td>50</td><td>570</td></tr> <tr> <td>2 1/2</td><td>229</td><td>65</td><td>870</td></tr> <tr> <td>3</td><td>330</td><td>75</td><td>1250</td></tr> <tr> <td>3 1/2</td><td>450</td><td>85</td><td>1710</td></tr> <tr> <td>4</td><td>590</td><td>100</td><td>2240</td></tr> </table>			Nominal Pipe Size (in.)	Flow rate (gpm)	Nominal Pipe Size (mm)	Flow Rate (L/min)	1	37	25	140	1 1/2	85	38	330	2	150	50	570	2 1/2	229	65	870	3	330	75	1250	3 1/2	450	85	1710	4	590	100	2240
Nominal Pipe Size (in.)	Flow rate (gpm)	Nominal Pipe Size (mm)	Flow Rate (L/min)																																
1	37	25	140																																
1 1/2	85	38	330																																
2	150	50	570																																
2 1/2	229	65	870																																
3	330	75	1250																																
3 1/2	450	85	1710																																
4	590	100	2240																																

	5	920	125	3490
	6	1360	150	5150
	8	2350	200	8900
	10	3670	250	13900
	12	5290	300	20100
	14	7200	350	27300
	16	9400	400	35600
	14.1.1.2—			
	Flushing shall occur prior to hydrostatic test.			
	14.1.1.3—			
	Where the maximum flow available from the water supply cannot provide the flow rate provided in Table 14.1.1.1, the flushing flow rate shall be equal to or greater than 150 percent of rated flow of the connected fire pump.			
	14.1.1.3.1—			
	Where the maximum flow available from the water supply cannot provide a flow of 150 percent of the rated flow of the pump, the flushing flow rate shall be the greater of 100 percent of rated flow of the connected fire pump or the maximum flow demand of the fire protection system.			
	14.1.1.3.2—			
	A reduced flushing flow capacity in accordance with 14.1.1.3.1 shall constitute an acceptable test, provided that the flow rate is as much as can be safely achieved and it exceeds the fire protection system design flow rate.			

Proposed Committee Text (FR):	
Proposed Statement (Substantiation):	The underground flushing requirements for piping connected to a fire pump in NFPA 24 are extracted from NFPA 20. By deleting this section, NFPA 24 would have to adopt them without the extract, which would then allow the NFPA 24 TC to make changes that may not be in agreement with the NFPA 20 TC. It is also preferable to have all the requirements needed to install a fire pump in NFPA 20, rather than send the installer to other documents.

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
14.2.6.8.1	52		Move to create a first revision based on PI#52 with the changes as shown.
Public Input Text (PI):	14.2.6.8.1 When dry charge batteries have been supplied, electrolyte shall be added to the batteries <u>and charged for</u> a minimum of 24 hours prior to <u>connecting to</u> the time the engine is to be started and the batteries given a conditioning charge.		
Proposed Committee Text (FR):	14.2.6.8.1 When dry charge batteries have been supplied, electrolyte shall be added to the batteries <u>and charged for</u> a minimum of 24 hours prior to <u>starting</u> the time the engine is to be started and the batteries given a conditioning charge.		

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Proposed Statement (Substantiation):	This revision clarifies that dry charge batteries should be filled and charger prior to starting the engine, not prior to connecting to the engine. Charging batteries is normally accomplished when the batteries are connected to the engine and the controller. After adding the electrolyte the batteries must be allowed to charge for at least 24 hours before trying to start the engine. Without being allowed to connect to the engine for charging, the batteries would need to be charged using an independent charger.
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NFPA 20 PI Review Task Group 7 Report

SECTION:	PI#:	AGENDA PAGE:	RECOMMENDED MOTION:
4.7.6	56		
Public Input Text (PI):	4.7.6* The driver shall be selected in accordance with 9.5.2 (for electric motors), 11.2.2 (for diesel engines), or 13.1.2 (for steam turbines) to provide the required power to operate the pump at rated speed and maximum pump load under any<u>up to 200 percent rated</u> flow condition.		
Proposed Committee Text (FR):	Having met twice TG 7 is still divided on the proposed change and will require the assistance of the full committee. Notes from TG 7 Meetings for committee review: - A majority of members of the TG agree that it would be rare for a pump to carry out to far past 200% of the rated flow point due to lack of sufficient suction pressures in the field, with the exception of a few US municipalities. - A majority of members also agree that if the pump is running past 200% then it is likely of little value to the sprinkler system (damaged risers etc...) - Several of the pump manufacturers expressed frustration with the testing requirements (adding pumps to boost suction to the Fire Pump) in order to peak power. However UL expressed that since the requirement exists this is the only way to show true peak power. - The question of whether or not the peak power requirement should be used to prevent the destruction of the electric motor controller was raised. It was also discussed whether or not capping power would lead to situations where a motor could be overloaded, due to the fact that lack of sufficient		

	suction pressure would cause the pump to cavitate before the pump is able to reach peak HP. - It was also argued that the current sizing of fire pump motors and controllers discourages global adoption of NFPA 20. - UL and FM have both indicated openness to change but not until NFPA 20 takes the lead on this issue. - In the last TG meeting a straw poll was held and the results were as follows (3) members voted to adopt the proposed language of the PI to limit flow to 200%. (3) members voted to keep the current language in NFPA 20 on peak power. (4) members agreed that the current requirement should change but did not think the flow limitation was the correct criteria for limiting power.
Proposed Statement (Substantiation):	

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Task Group 8 Report

Annex D Material Extracted by Article 695 of NFPA 70

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

D.1 General.

Table D.1 indicates corresponding sections of Article 695 of NFPA 70.

Table D.1 NFPA 70 Extracted Material

NFPA 20		NFPA 70 Article 695		Article 695 Titles or Text
2022-2025 Edition	2025-2028 Edition	2020-2023 Edition	2023-2026 Edition	
(Reference Only)		695.2 Article 100	Article 100Same	Definitions
3.3.11.2	Same	695.2 Article 100	Article 100NAArticle 100	Fault Tolerant External Control Circuits
3.3.48.2	Same	695.2 Article 100	Article 100Same	On-Site Power Production Facility
3.3.48.3	Same	695.2 Article 100	Article 100Same	On-Site Standby Generator
9.2.1	Same	695.3	Same695.4	Power Source(s) for Electric Motor-Driven Fire Pumps
9.2	Same	695.3(A)	Same695.4(A)	Individual Sources
9.2.2(1)	Same	695.3(A)(1)	Same695.4(A)(1)	Electric Utility Service Connection (2nd Sentence)
9.2.2(2)	Same	695.3(A)(2)	Same695.4(A)(2)	On-Site Power Production Facility
9.2.2(3)	Same	695.3(A)(3)	Same695.4(A)(3)	Dedicated Feeder
9.3.21	9.3.1Same	695.3(B)	Same695.4(B)	Multiple Sources
9.3.43(2)	9.3.3(2)Same	695.3(B)(1)	Same695.4(B)(1)	Individual Sources
9.3.43(1)	9.3.3(1)Same	695.3(B)(2)	Same695.4(B)(2)	Individual Source and On-Site Standby Generator
9.2.2(4)	Same	695.3(C)	Same695.4(C)	Multibuilding Campus-Style Complexes
9.2.2(4)	Same	695.3(C)(1)	Same695.4(C)(1)	Feeder Sources
9.2.2(4)	Same	695.3(C)(2)	Same695.4(C)(2)	Feeder and Alternate Sources
NA9.2.2(4)	9.2.2(4)Same	695.3(C)(3)	Same695.4(C)(3)	Selective Coordination
9.6.2.1	Same	695.3(D)	Same695.4(D)	On-Site Standby Generator as Alternate Source
9.6.1.1	Same	695.3(D)(1)	Same695.4(D)(1)	Capacity
9.6.1.2	Same	695.3(D)(2)	Same695.4(D)(2)	Connection
N/A	Same	695.3(D)(3)	Same695.4(D)(3)	Adjacent Disconnections
9.1.4	Same	695.3(E)	Same695.4(E)	Arrangement

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NFPA 20		NFPA 70 Article 695		Article 695 Titles or Text
2022-2025 Edition	2025-2028 Edition	2020-2023 Edition	2023-2026 Edition	
9.6.4	Same	695.3(F)	Same 695.4(F)	Transfer of Power
10.8.3.1	Same	695.3(G)	Same 695.4(G)	Power Source Selection
9.1.7	Same	695.3(I)	Same 695.4(H)	Phase Converters
9.2.1	Same	695.4	Same 695.5	Continuity of Power
9.2.2	Same	695.4(A)	Same 695.5(A)	Direct Connection
9.2.3	Same	695.4(B)(1)	Same 695.5(B)(1)	Number of Disconnecting Means
9.2.3	Same	695.4(B)(1)(a)	Same 695.5(B)(1)(a)	General
9.2.3	Same	695.4(B)(1)(a)(1)	Same 695.5(B)(1)(a)(1)	(listed fire pump controller)
9.2.3	Same	695.4(B)(1)(a)(2)	Same 695.5(B)(1)(a)(2)	(listed fire pump power transfer switch)
9.2.3	Same	695.4(B)(1)(a)(3)	Same 695.5(B)(1)(a)(3)	(listed combo, fire pump controller/transfer switch)
9.2.2(4)	9.2.2(4) Same	695.4(B)(1)(b)	Same 695.5(B)(1)(b)	Feeder Sources
9.3.3.12	9.3.3.1 Same	695.4(B)(1)(c)	Same 695.5(B)(1)(c)	On-Site Standby Generator
9.2.3.4, 9.6.5.1	9.2.3.4, 9.6.5.1 Same	695.4(B)(2)	Same 695.5(B)(2)	Overcurrent Device Selection
9.2.3.4	Same	695.4(B)(2)(a)	Same 695.5(B)(2)(a)	Individual Sources
9.6.1.1	9.6.1.1 Same	695.4(B)(2)(b)	695.5(B)(2)(b) Same	On-Site Standby Generators
9.2.3	Same	695.4(B)(3)	695.5(B)(3) Same	Disconnecting Means
9.2.3.1	Same	695.4(B)(3)(a)	695.5(B)(3)(a) Same	Features and Location – Normal Power Source
9.2.3.1(1)	Same	695.4(B)(3)(a)(1)	695.5(B)(3)(a)(1) Same	Be identifiable as suitable for use as service equipment...
9.2.3.1(2)	Same	695.4(B)(3)(a)(2)	695.5(B)(3)(a)(2) Same	Be lockable in the closed position...
9.2.3.1(3)	Same	695.4(B)(3)(a)(3)	695.5(B)(3)(a)(3) Same	Not be located within equipment that feeds loads other than...
9.2.3.1(4)	Same	695.4(B)(3)(a)(4)	695.5(B)(3)(a)(4) Same	Be located sufficiently remote from...
N/A		695.4(B)(3)(b)	695.5(B)(3)(b) Same	Features and Location – On – Site Standby Generator
9.2.3.1(5)	Same	695.4(B)(3)(c)	695.5(B)(3)(c) Same	Disconnect Marking
9.2.3.2	Same	695.4(B)(3)(d)	695.5(B)(3)(d) Same	Controller Marking
9.2.3.3	Same	695.4(B)(3)(e)	695.5(B)(3)(e) Same	Supervision
9.2.3.3(1)	Same	695.4(B)(3)(e)(1)	695.5(B)(3)(e)(1) Same	Central station, proprietary, or remote station...
9.2.3.3(2)	Same	695.4(B)(3)(e)(2)	695.5(B)(3)(e)(2) Same	Local signaling service...

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NFPA 20		NFPA 70 Article 695		Article 695 Titles or Text
2022-2025 Edition	2025-2028 Edition	2020-2023 Edition	2023-2026 Edition	
9.2.3.3(3)	Same	695.4(B)(3)(e)(3)	695.5(B)(3)(e)(3) Same	Locking the disconnecting means...
9.2.3.3(4)	Same	695.4(B)(3)(f)	695.5(B)(3)(e)(4) Same	Sealing of disconnecting means...
9.2.2(5)	Same	695.5	Same 695.6	Transformers
Reference Only		695.6	Same 695.7	Power Wiring
N/A		695.6(E)	695.7(E) Same	Loads Supplied by Controllers and Transfer Switches
9.8	Same	695.6(H)	695.7(H) Same	Listed Electrical Circuit Protective System to Controller Wiring
9.8.1.1	Same	695.6(H)(1)	695.7(H)(1) Same	A junction box shall be installed ahead of the fire pump controller...
9.8.2	Same	695.6(H)(2)	695.7(H)(2) Same	...the raceway between the controller and junction box shall be sealed
9.8.3	Same	695.6(H)(3)	695.7(H)(3) Same	Standard wiring between the junction box and controller is permitted
9.7	Same	695.6(I)	695.7(I) Same	Junction boxes
9.7(1)	Same	695.6(I)(1)	695.7(I)(1) Same	The junction box shall be securely mounted
9.7(2)	Same	695.6(I)(2)	695.7(I)(2) Same	Mounting and Installing... shall not violate the enclosure type rating...
9.7(3), 9.7(4)	Same 9.7(3)	695.6(I)(3)	695.7(I)(3) Same	Mounting and Installing... shall not affect the short circuit rating...
NA	9.7(4)	NA	695.7(I)(4)	<u>Mounting and installing of a junction box shall not affect the short-circuit current rating...</u>
9.7(5), 9.7(6)	Same 9.7(5)	695.6(I)(4)	695.7(I)(5) Same	...a Type 2... enclosure shall be used...
9.7(6) NA	9.7(6)	NA	695.7(I)(6)	<u>The enclosure shall be listed to match the fire pump controller enclosure type rating</u>
9.7(7)	Same	695.6(I)(5)	695.7(I)(7) Same	Terminals, junction blocks, wire connectors, and splices shall be listed
9.7(8), 9.7(9)	Same	695.6(I)(6)	695.7(I)(8) Same	A fire pump controller or...transfer switch shall not be used as a junction box...

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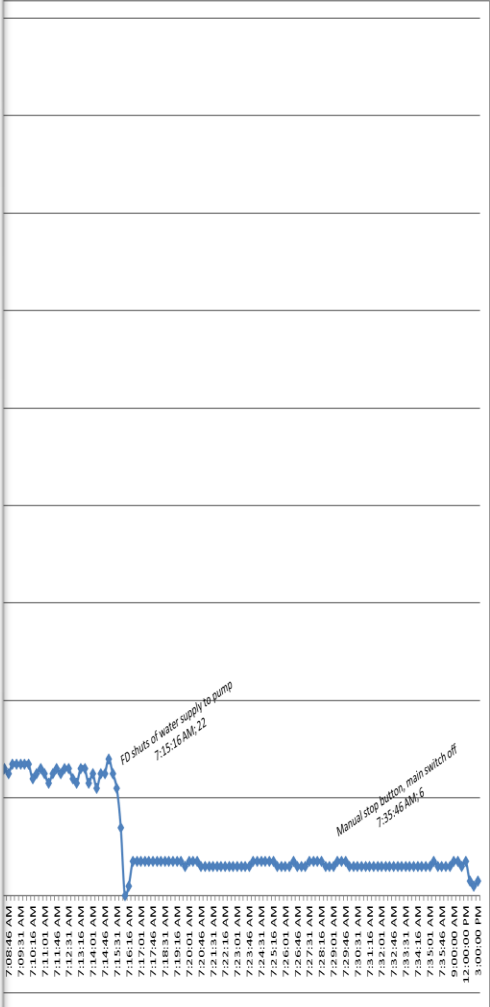
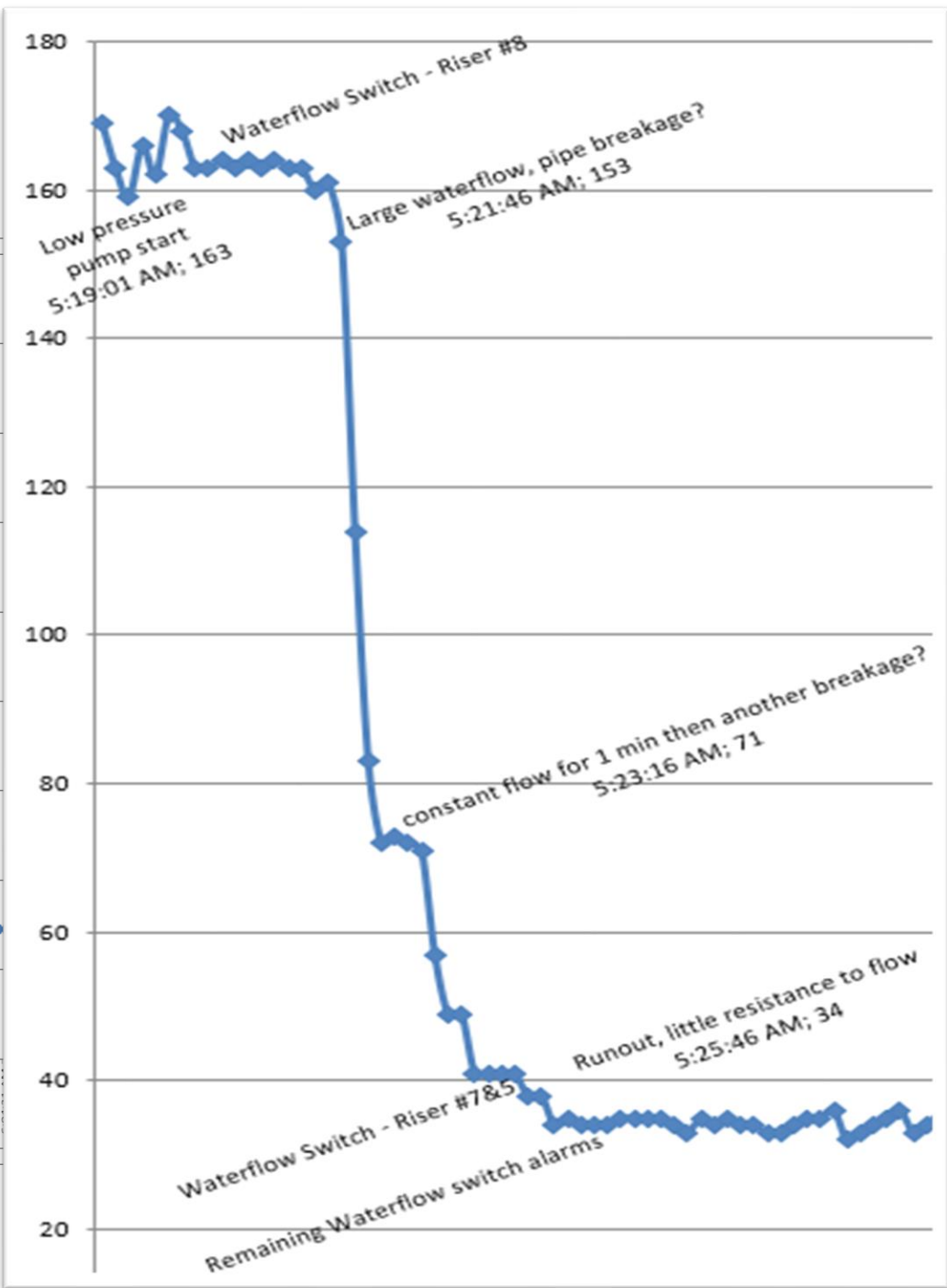
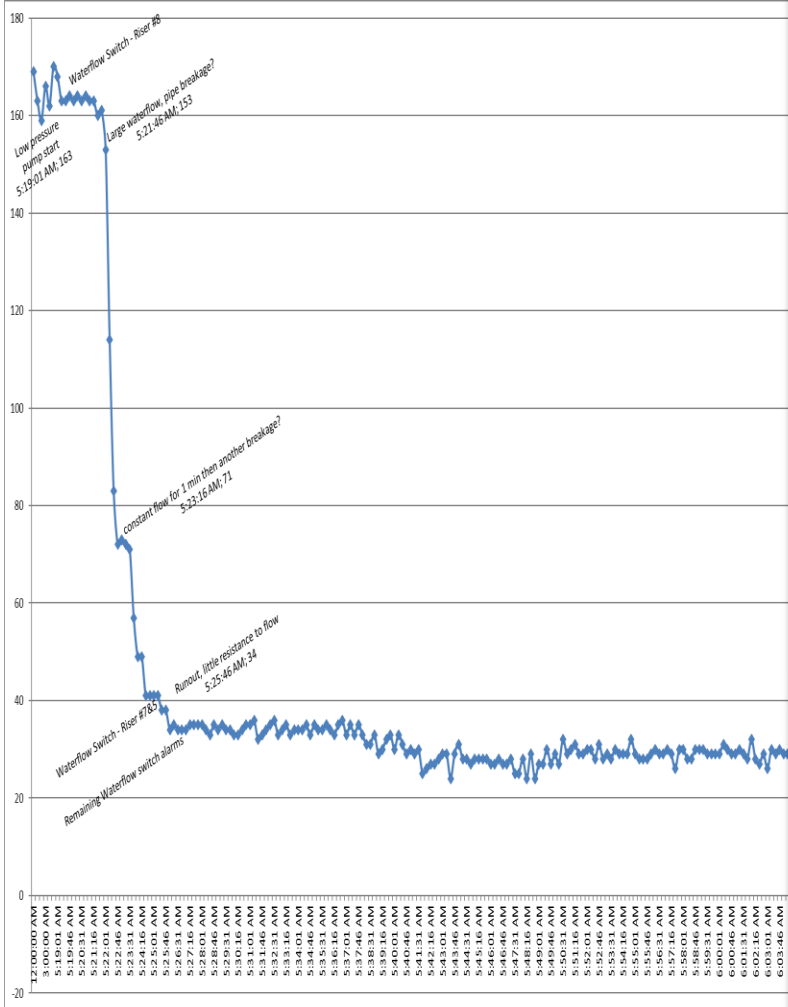
NFPA 20		NFPA 70 Article 695		Article 695 Titles or Text
2022-2025 Edition	2025-2028 Edition	2020-2023 Edition	2023-2026 Edition	
9.7(9)NA	9.7(9)	NA	695.7(I)(9)	A fire pump controller or a fire pump power transfer switch shall not be used as a junction box for wire splices
-	-	-	-	-
9.9.1	Same	695.6(J)(1)	695.7(J)(1)Same	Listed Conduit Hubs raceway or cable fittings
9.9.2	Same	695.6(J)(2)	695.7(J)(2)Same	The type rating of conduit hub the raceway or cable fittings
9.9.3	Same	695.6(J)(3)	695.7(J)(3)Same	Installation instructions
9.9.4	Same	695.6(J)(4)	695.7(J)(4)Same	Alterations to the controller
9.4	Same	695.7	695.8Same	Voltage Drop
9.4.1	Same	695.7(A)	695.8(A)695.7(A)	Motor Starting
9.4.2, 9.4.2.1	9.4.2, 9.4.2.1 Same	695.7(AB)	695.8(B)695.7(B)	Emergency Run
9.4.3	Same	NA695.7(C)	695.8(C)695.7(C)	Bypass Mode
9.4.4	Same	695.7(BD)	695.8(D)695.7(D)	Motor Running
9.5.1.1	Same	695.10	Same695.2	Listed Equipment
10.1.2.1	Same	695.10	Same695.2	Listed Equipment
10.78.3.1	10.8.3.1 Same	695.10	Same695.2	Listed Equipment
12.1.3.1	Same	695.10	Same695.2	Listed Equipment
(Reference Only)	Same	695.12	Same	Equipment Location
10.2.1	Same	695.12(A)	Same	Controllers and Transfer Switches
12.2.1	Same	695.12(B)	Same	Engine-Drive Controllers
11.2.7.2.54.1	11.2.7.2.4.1 Same	695.12(C)	Same	Storage Batteries
11.2.7.2.54.2	11.2.7.2.4.2 Same	695.12(D)	Same	Energized Equipment
10.2.2	Same	695.12(E)	Same	Protection Against Pump Water
12.2.2	Same	695.12(E)	Same	Protection Against Pump Water
10.3.2	Same	695.12(F)	Same	Mounting
12.3.2	Same	695.12(F)	Same	Mounting
10.5.2.6	Same	695.14(A)	Same	Control Circuit Failures
12.7.2.56	12.7.2.6 Same	695.14(A)	Same	Control Circuit Failures
10.4.5.73.4.5.2	10.3.4.5.2 Same	695.14(B)	Same	Sensor Functioning
10.78.1.3	10.8.1.3 Same	695.14(C)	Same	Remote Device(s)
12.3.5.1	Same	695.14(D)	Same	Engine-Drive Control Wiring

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NFPA 20		NFPA 70 Article 695		Article 695 Titles or Text
2022-2025 Edition	2025-2028 Edition	2020-2023 Edition	2023-2026 Edition	
(Reference Only)		695.14(E)	Same	Electric Fire Pump Control Wiring Methods
Additional References – Informational Only				
A.9.3.21(13)	A.9.3.1(1)(3) Same	695.6(A)	Same 695.7(A)	Supply Conductors
9.6.4	Same	695.12(A) 695.3(F)	Same 695.4(F)	Controllers and Transfer Switches
A.9.3.2(3)	N/A	695.14(F)	Same	Generator Control Wiring Methods

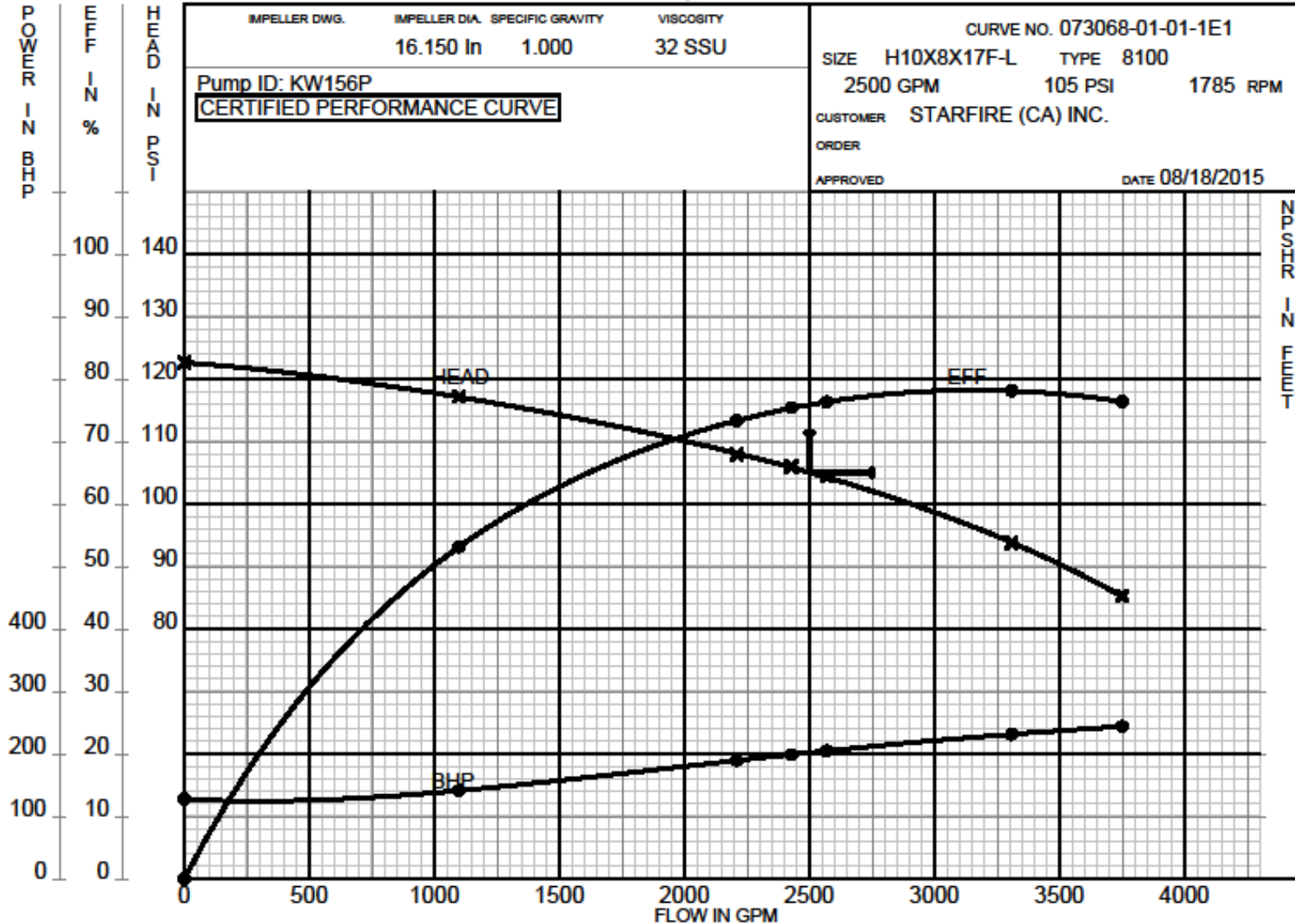
Warehouse Incident

AC Fire 8100 10x8x17F-L



Warehouse Incident

AC Fire 8100 10x8x17F-L



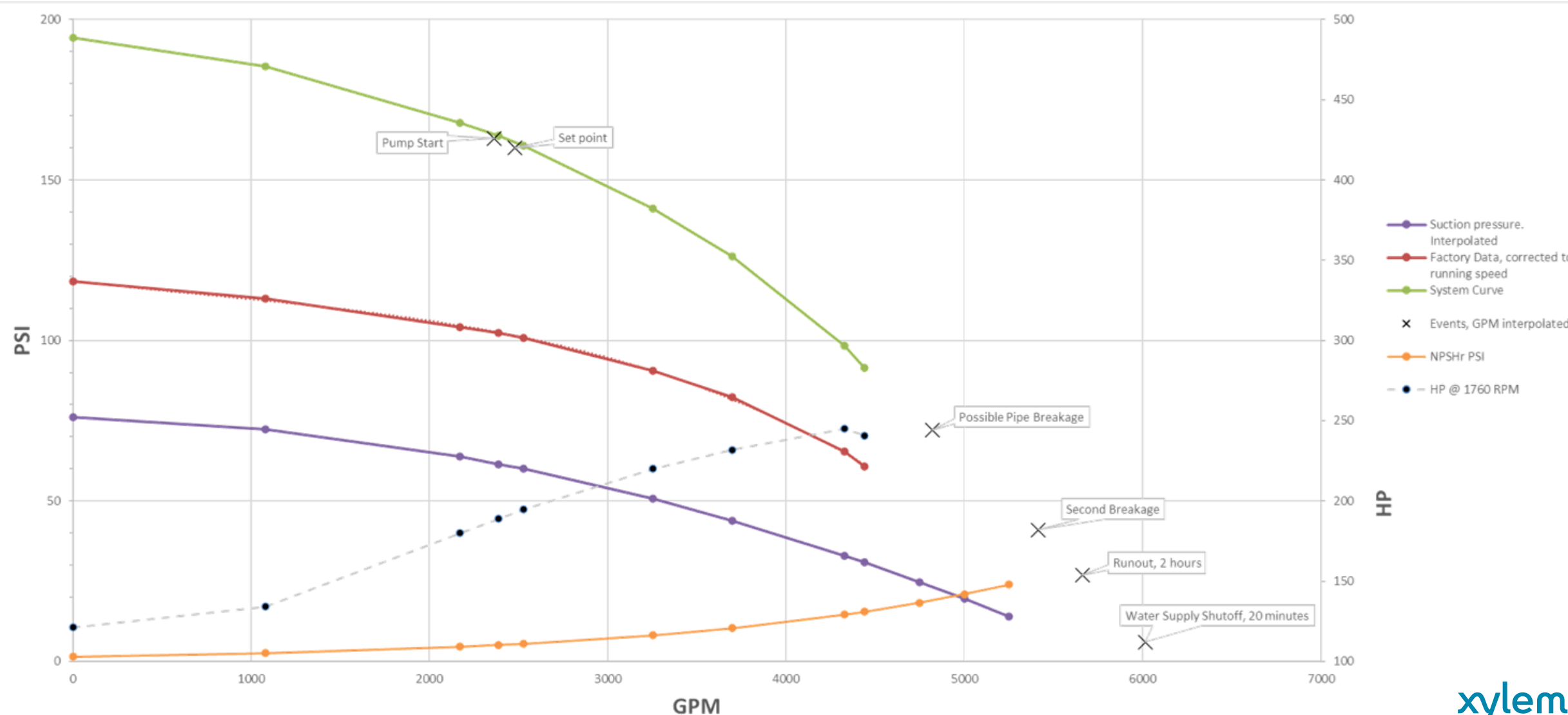
TEST DATA CORRECTED TO 1785 RPM

Flow Rate (GPM)	Total Head (Feet)	Torque (in-lb)	Total Power (BHP)	Pump Eff. (%)	Shaft Speed (RPM)
0.0	281.3		126.331	0.000	
1094.9	268.7		139.866	53.113	
2202.6	247.5		187.807	73.303	
2421.0	243.1		197.131	75.405	
2561.9	239.4		202.985	76.287	
3299.3	215.1		229.420	78.101	
3750.8	195.5		241.738	76.616	
4387.5	155.5		255.433	67.454	

City Water Supply		City Water Adjusted to Pump Inlet for Pf - Elev - Hose Flow	
GPM	PSI	GPM	PSI
0	81	0	76
1061	78.3	2500	57.906
3750	53.09	3750	37.69
5722.54	20		
6670.51	0		

Warehouse Incident

AC Fire 8100 10x8x17F-L



NFPA 20 Curve limits

