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MINUTES

NFPA Technical Committee on Electrical Equipment of Industrial Machinery (EEI-AAA) NFPA 79 Second Draft Meeting (F2026)

March 17 & 18, 2026
8:00 AM – 5:00 PM (ET)

NFPA Headquarters Quincy, MA w/virtual option

1. **Call to order.** Mark Hilbert, chair, called the meeting to order at 8:05 AM on 3/17/2026.
2. **Introductions.** Attendees introduced themselves and identified their affiliation and NFPA staff took attendance.
3. **Chair report.** Mark Hilbert welcomed attendees and provided an overview of the meeting.
4. **Staff liaison report.** Jeff Sargent provided an overview of the standards development process and the revision cycle schedule.
 - 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 March 10 & 11 teleconference (virtual) meeting were approved without revision.
6. **NFPA 79 Second Draft.**
 - a. **Review of Public Comments and Committee Inputs.** The Technical Committee reviewed the Public Comments and Committee Inputs and developed Second Revisions, as necessary. These will be available in the Second Draft Report at www.nfpa.org/79.
 - b. **Task group reports.** The following task groups provided their reports and recommendations.
 - i. **Task Group 1.** Dan Neeser - Chair. The task group provided a report with recommended actions on public comments and second revisions were made. The task group has been discharged with thanks. See attached.
 - ii. **Task Group 2.** Keith Waters - Chair. The task group provided a report with recommended actions on public comments and second revisions were made. The task group has been discharged with thanks. See attached.
 - iii. **Task Group 3.** Jay Tamblingson - Chair. The task group provided a report with recommended actions on public comments and second revisions were made. The task group has been discharged with thanks. See attached.

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

- iv. **Task Group 4.** Heath Garrison - Chair. The task group provided a report with recommended actions on public comments and second revisions were made. The task group has been discharged with thanks. See attached.
 - v. **Task Group 5.** Palmer Hickman - Chair. The task group provided a report with recommended actions on public comments and second revisions were made. The task group has been discharged with thanks. See attached.
 - vi. **Task Group 6.** Kyle Krueger - Chair. The task group provided a report with recommended actions on public comments and second revisions were made. The task group has been discharged with thanks. See attached.
- c. **Presentation(s).** The committee heard one presentation from the following individual.
- i. **Cybersecurity.** Andy Thanos, Cisco Inc, Member of NFPA Cybersecurity Advisory Committee. 10 minutes plus Q&A. Verbal presentation only.
- d. **New task groups.** The following task groups were suggested to work subsequent to the meeting. These task groups will be appointed by the new chair of EEI-AAA. The scopes of these task groups will be finalized when chairs and members are appointed.
- i. **Task Group on NFPA Manual of Style Compliance.**
 - 1. Develop a comprehensive scope of work for the project
 - 2. Review the Manual of Style and NFPA 79 to align the standard with current formatting and style requirements
 - 3. Evaluate and reduce the use of exceptions where possible to improve clarity and enforceability
 - 4. Consolidate or eliminate redundant requirements within the normative text to enhance usability and consistency
 - ii. **Task Group on Referenced Publications and Definitions.**
 - 1. Develop a comprehensive scope of work for the project
 - 2. Perform a detailed review of Chapter 2 and Annex K, including referenced publications, to identify outdated or non-applicable references
 - 3. Verify ANSI accreditation status and compliance requirements
 - 4. Review all definitions to confirm they remain relevant and are properly utilized within the document
 - 5. Evaluate definitions for compliance with the NFPA Manual of Style, including verification of extracted definitions for accuracy and consistency
 - iii. **Task Group on Review of Tables in the Standard.**
 - 1. Develop a comprehensive scope of work for the project

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2. Review all tables to determine whether aluminum or copper-clad aluminum should be included where conductor properties or materials are specified
3. Evaluate the document for redundancies and determine whether they are necessary or can be consolidated
4. Review table notes to ensure clarity and confirm that enforceable language is appropriately used

iv. Task Group on Cybersecurity.

1. Develop a comprehensive scope of work for the project
2. Evaluate NFPA 79 for potential correlation with other applicable codes and standards to ensure consistency and alignment
3. Assess the appropriate placement of requirements within the document to improve organization and usability
4. Determine the need for involvement from a cybersecurity oversight committee and identify areas where cybersecurity considerations may be applicable

v. Task Group on Overcurrent Protective Device Terminology.

1. Develop a comprehensive scope of work for the project
2. Evaluate the terminology used for overcurrent protective devices and assess consistency with terminology used in NFPA 70
3. Determine whether alignment or correlation of language with the NEC is appropriate to improve clarity and consistency across standards

vi. Task Group on Robotics.

1. Develop a comprehensive scope of work for the project
2. Evaluate whether robotics systems fall within the scope of NFPA 79
3. Assess applicability to permanently installed, fixed-in-place, and connected robotic equipment
4. Identify and consider various types of robotic systems, including articulated, gantry, collaborative, and autonomous mobile robots, to determine appropriate coverage within the standard
5. References to NFPA 79

vii. Task Group on GFCI Requirements.

1. Develop a comprehensive scope of work for the project
2. Review Sections 15.1.1 and 15.1.2 for technical accuracy and applicability
3. Evaluate whether more stringent ground-fault circuit-interrupter (GFCI) protection requirements are justified compared to those in NFPA 70

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4. Determine whether correlation with NEC provisions is appropriate to ensure consistency and avoid unnecessary deviations
7. **Other Business.** The EEI-AAA technical committee did not discuss or act on any new business.
8. **Future meetings.** This was the final meeting of this committee for the revision cycle. Public Inputs for the next edition are expected to close in early January 2028. A meeting notification will be posted at www.nfpa.org/79next when the next meeting is scheduled.
9. **Adjournment.** The meeting was adjourned at 5:27 PM on 3/18/2026.

Attendees

Committee Members:

✓	Mark Hilbert	Chair	Independent Alliance of the Electrical Industry
	Jim Couch	Principal	The Association for Manufacturing Technology
✓	Mike Dionne*	Principal	Adaptive Resources
✓	Paul Dobrowsky*	Principal	Innovative Technology Services
✓	Gregory Doppke	Principal	General Motors
	Stephen Douglas	Principal	QPS Evaluation Services, Inc.
✓	Matt Egloff*	Principal	Montana Tech, University of Montana
✓	Heath Garrison	Principal	National Laboratory of the Rockies (NLR)
✓	Robert Gruendel*	Principal	Self
✓	Palmer Hickman*	Principal	International Brotherhood of Electrical Workers
	James Holton	Principal	International Union UAW Health and Safety
✓	Peter Hoogerdijk	Principal	UL Solutions
✓	Kyle Krueger	Principal	National Electrical Contractors Association
	Dino Mariuz	Principal	Pilz Automation Safety L.P.
✓	Glenn Merrell*	Principal	FC/Industrial Control Systems Security
✓	Daleep Mohla*	Principal	IEEE-IAS/PES JTCC
✓	Daniel Neeser*	Principal	National Electrical Manufacturers Association
✓	Thi Nguyen	Principal	The Boeing Company
	Simone Parot	Principal	Toyota Motor Engineering & Manufacturing
	John Piller	Principal	J Piller Design and Consulting

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✓	Stephan Pochon*	Principal	Amazon
✓	George Schreck*	Principal	Komatsu America Industries, LLC
✓	Mike Soter*	Principal	SDK Engineering, LLC
	Jason Sroczynski	Principal	Leilac US Inc.
✓	Mike Steele*	Principal	R.A. Jones
✓	Andras Szende	Principal	TUV Rheinland
✓	Marco Tacchini	Principal	GT Engineering
✓	Jay Tamblingson	Principal	Rockwell Automation
✓	Keith Waters*	Principal	Schneider Electric
	Carlos Baron	Voting Alternate	Rivian Automotive
✓	Adam Gilbert*	Voting Alternate	Intertek
	Lee Anderson Lindsay	Voting Alternate	Honeywell
✓	Robert Charles Anderson*	Alternate	Komatsu America
	Chip Boertlein	Alternate	Toyota Motor Engineering & Manufacturing
	Ron Borowski	Alternate	National Electrical Manufacturers Association
	Etaune Johnell Johnson	Alternate	Pilz Automation Safety, LP
✓	Jonathan Johnson	Alternate	Rockwell Automation
✓	Tim Johnson	Alternate	TUV Rheinland of North America Inc.
✓	James Maxfield*	Alternate	International Alliance of the Electrical Industry
	Jim Morrison	Alternate	QPS Evaluation Services Inc.
✓	Dirk R.F. Mueller	Alternate	UL Solutions
✓	Matthew Stolspart*	Alternate	International Brotherhood of Electrical Workers
✓	Robert Zachariason	Alternate	National Electrical Contractors Association
✓	Guido Battista Zotti*	Alternate	GT Engineering

NFPA Staff:

Sarah Caldwell	NFPA Staff
Chad Duffy	NFPA Staff
Nicholas Duggan	NFPA Staff
Sam Rokowski	NFPA Staff
Jeff Sargent	NFPA Staff

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Guests:

Larry Ayer	Independent Electrical Contractors, Inc.
Nick Durazo	Vertiv
Timothy Lueck	UL Solutions
Charles McGaughy	Schneider Electric
Andy Thanos	Cisco Systems Inc.

*Participated by teleconference

Total number in attendance: 41

TG #	1	
TG CHAIR	Dan Neeser	
TG MEMBERS	Jay Tamblingson, Heath Garrison, Benjamin Woods, Lee Lindsay, Mike Sorter, Jim Morrison, Kyle Krueger	
Second Draft Actions on Public Comments		
Accept - The recommendation is completely accepted word-for-word. This action will create a second revision that will change the action that was taken at the first draft stage.		
Reject - This action means that the recommendation of the comment is completely rejected.		
Reject, but See Related Second Revision (Reject, but See) - The panel created a second revision based on the comment, but the action is not exactly what the submitter recommended. This action is necessary if the panel is doing exactly what the comment asks for, but there are multiple comments that are recommending the same action or a similar action.		
Reject, but Hold - The action requested will not be implemented for this cycle but will be reconsidered in the next revision cycle. The effect of this action is identical to the “Hold” action of the previous system.		
Section	Public Comment #	Recommended Panel Action, Revision Language and Statement
2.2	27	Panel Action: Reject, But See Second Revision
		Revised Text: 2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. NFPA 70®, National Electrical Code®, 20232026 edition. NFPA 70B®, Standard for Electrical Equipment Maintenance®, 2026 edition. NFPA 70E®, Standard for Electrical Safety in the Workplace®, 2024 edition.
		Statement: The NEC reference is updated to the current edition. NFPA 70B is added for correlation with the revision to 17.9.1.
2.4	28	Panel Action: Reject, But See Second Revision
		Revised Text: 2.4 References for Extracts in Mandatory Sections. NFPA 70®, National Electrical Code®, 20232026 edition. NFPA 70E®, Standard for Electrical Safety in the Workplace®, 2024 edition.
		Statement: The NEC reference is updated to the current edition. The reference to NFPA 70B is not added because there is no text extracted from that document.
3.3.34	12 22	Panel Action: Accept
		Revised Text: ~~3.3.34 Electroactive.~~ ~~A material that exhibits a change in size or shape when stimulated by an electric field.~~

		Statement: The definition of electrocactive has been removed in accordance with 5.4 of the NFPA Manual of Style as the defined term is not found in the document.
11.4.8	17 23	Panel Action: Reject, But See Second Revision Revised Text: 11.4.8 At least one print pocket, <u>of sufficient durability to withstand the physical environment, and sized to accommodate physical electrical diagrams or software media shall be attached to the inside or outside of the door of the control enclosure or compartment, as is suitable for the environment.</u> <i>Exception: It shall be permissible to omit the print pocket and store the electrical diagrams and software media at a remote location provided the location is marked on the enclosure.</i> Statement: The text has been editorial revised for clarity, consistency, and compliance with NFPA Manual of Style Table A.4.2.2.1 for unenforceable and vague terms.
12.2.7.2	18 24	Panel Action: Reject, But See Second Revision Revised Text: 12.2.7.2 Machine supply circuit terminals shall be identified ~~as suitable~~ for the conductor material used for the machine supply circuit. Statement: The phrase "as suitable" has been deleted in compliance with NFPA Manual of Style, Table A.4.2.2.1.
17.9.1	26	Panel Action: Reject, But See Second Revision Revised Text: 17.9.1* The technical documentation shall contain a maintenance manual detailing proper procedures for adjustment, servicing and preventive inspection, ~~and repair~~ <u>and consider the relevant maintenance requirements for electrical equipment contained in NFPA 70B.</u> Statement: Industrial machinery contains electrical equipment that is required to be maintained in accordance with NFPA 70B. Properly maintained electrical equipment is required by NFPA 70E in order to determine electrical hazards when interacting with equipment.
K.1.1	19 25 6 (from TG2)	Panel Action: Reject, But See Second Revision Revised Text: K.1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. NFPA 70®, <i>National Electrical Code</i>®, 20232026 edition. <u>NFPA 70B®, <i>Standard for Electrical Equipment Maintenance</i>®, 2026 edition.</u> NFPA 70E®, <i>Standard for Electrical Safety in the Workplace</i>®, 2024 edition. NFPA 77, <i>Recommended Practice on Static Electricity</i>, 2024 edition. Statement: The NEC reference is updated to the current edition. NFPA 70B is added for correlation with the revision to 17.9.1.

K.1.2.10	21 36	Panel Action: Reject, But See Second Revision Revised Text: K.1.2.10 UL Publications. UL Standards and Engagement, 1603 Orrington Avenue #2000, Evanston, IL 60201. UL 50, <i>Enclosures for Electrical Equipment, Non-Environmental Considerations</i>, 2024. UL 62, <i>Flexible Cord and Cables</i>, 2018, revised 2023. UL 248-14, <i>Low-Voltage Fuses — Part 14: Supplemental Fuses</i>, 2000, revised 2020. UL 489, <i>Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures</i>, 2016, revised 2019. UL 498, <i>Attachment Plugs and Receptacles</i>, 2017, revised 2024. UL 508, <i>Industrial Control Equipment</i>, 2024. UL 508A, <i>Industrial Control Panels</i>, 2018, revised 2022. UL 651, <i>Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings</i>, 2011, revised 2022. UL 758, <i>Appliance Wiring Material</i>, 2014, revised 2024. UL 1004-1, <i>Rotating Electrical Machines — General Requirements</i>, 2012, revised 2020. UL 1077, <i>Supplementary Protectors for Use in Electrical Equipment</i>, 2015, revised 2021. <u>UL 1436, <i>Outlet Circuit Testers and Similar Indicating Devices</i>, 2016</u> UL 1682, <i>Plugs, Receptacles, and Cable Connectors of the Pin and Sleeve Type</i>, 2024. UL 2237, <i>Multi-Point Interconnection Power Cable Assemblies for Industrial Machinery</i>, 2019, revised 2021. UL 2238, <i>Cable Assemblies and Fittings for Industrial Control and Signal Distribution</i>, 2018, revised 2023. UL 2900-2-3, <i>Software Cybersecurity for Network-Connectable Products, Part 2-3: Particular Requirements for Security and Life Safety Signaling Systems</i>, 2020, revised 2023. <u>UL 3100, <i>Automated Mobile Platforms</i>, revised 2023.</u> UL 6420, <i>Standard for Equipment Used for System Isolation and Rated as a Single Unit</i>, 2012, revised 2023. UL 60947-4-1, <i>Low-Voltage Switchgear and Controlgear — Part 4-1: Contactors and Motor-Starters — Electromechanical Contactors and Motor-Starters</i>, 2022. UL 60950-1, <i>Information Technology Equipment — Safety — Part I: General Requirements</i>, 2007, revised 2019. UL 61010-1, <i>Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements</i>, 2012, revised 2024. Statement: A reference to UL 1436, <i>Absence of Voltage Testers</i>, was added as they are now permitted per 5.1.13. A reference to UL 3100, <i>Automated Mobile Platforms</i>, was added to assist the user in locating the relevant standard for mobile robots.
		Panel Action: Revised Text: Statement:

TG #	2	
TG CHAIR	Keith Waters	
TG MEMBERS	Paul Dobrowsky, James Maxfield, Dan Neeser, Carlos Baron, Nick Durazo, Rob Zachariason, Adam Gilbert	
Second Draft Actions on Public Comments		
Accept - The recommendation is completely accepted word-for-word. This action will create a second revision that will change the action that was taken at the first draft stage.		
Reject - This action means that the recommendation of the comment is completely rejected.		
Reject, but See Related Second Revision (Reject, but See) - The panel created a second revision based on the comment, but the action is not exactly what the submitter recommended. This action is necessary if the panel is doing exactly what the comment asks for, but there are multiple comments that are recommending the same action or a similar action.		
Reject, but Hold - The action requested will not be implemented for this cycle but will be reconsidered in the next revision cycle. The effect of this action is identical to the “Hold” action of the previous system.		
Section	Public Comment #	Recommended Panel Action, Revision Language and Statement
2.2	2	Panel Action: Create SR TG2-1 Accept
		Revised Text: 2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. NFPA 70®, National Electrical Code®,2026 edition. NFPA 70E®, Standard for Electrical Safety in the Workplace®, 2027
		Statement: The 2026 version of the NEC has been published. The 2027 version of NFPA 70E was accepted as it will be published prior to the publication of NFPA 79.
3.3.9	10 42	Panel Action:
		PC#10 Reject
		PC #42 Reject
		Revised Text:
		Statement: The definition should be changed in the NEC prior to being changed in NFPA 79 so there is no conflict. Requirements for their use should also be added to the NEC to provide direction regarding which flexible cords and flexible cables can be connected to attachment plugs. If attachment plugs are presently specifically listed for use with flexible cables they can be used based on NFPA 79 section 4.3
3.3.80	3	Panel Action: Create SR TG2-2 Accept

		Revised Text: Overcurrent Protective Device, (OCPD). A device capable of providing protection over the full range of overcurrent between its rated current and its interrupting rating. [70, 2026] Statement: The definition is updated to match the current published definition of the 2026 NEC.
A.3.3.80	5	Panel Action: Create SR TG2-2 Revised Text: A.3.3.80 Overcurrent Protective Device (OCPD) In prior editions of the NEC, the term branch-circuit overcurrent protective device included devices suitable for providing protection for service, feeder, and branch circuits. The term has been revised to a more generalized overcurrent protective device (OCPD) . The specific requirements using this term can include modifiers (e.g., branch OCPD, feeder OCPD, service OCPD) to specify location or application of the OCPD, or to specify variations (e.g., supplementary OCPD). See NEC 240.7 for a list of OCPDs suitable for providing protection for service, feeder, branch circuits, and equipment. Statement: 2026 NEC had an information note detailing the change in terminology from branch-circuit overcurrent protective device to just overcurrent protective device. This clarifies that these devices provide protection for not just branch circuits, but also services and feeders.
6.4.1.2	4 15	Panel Action: Create SR TG2-3 PC# 4 Accept PC# 15 Reject but see SR TG2-3 Revised Text: 6.4.1.2 Class 2 circuits, as covered in Articles 720, 721, 722 and 725 of NFPA 70 (NEC), shall be permitted to be used to provide protection from electric shock and other hazards. Statement: The 2026 version of the NEC has been published and this update brings the new articles containing class 2 circuit information into NFPA 79. The public comment suggested the section should refer to article 724 in lieu of 722, but article 724 is for Class 1 power-limited circuits, not class 2. A class 2 circuit by the definition includes the cabling.
6.7	8	Panel Action: Create SR TG2-4 Reject but see Revised Text: 6.7* Class 4 Fault-Managed Power Systems (FMPS) Class 4 Power Systems installed in accordance with NFPA 70 shall be permitted. Statement: The addition of Class 4 FMPS provides an opportunity for industrial machines to utilize this new technology if they wish to do so. An annex is included to provide some additional guidance.
A6.7	9	Panel Action:

		Revised Text: A 6.7 Typical installation is a low power delivery over a long distance, 2000 to 3000 ft. A FMPS does not contain a disconnecting means, only on and off pushbuttons A FMPS does not have the ability to conduct lock out tag out. The disconnect means supplying the FMPS must have the ability to provide lock out tag out capability. A FMPS will automatically restart if the fault clears
		Statement: The addition of Class 4 FMPS is provide an opportunity for industrial machines to utilize this new technology if they wish to do so. This information provides additional guidance.
4.10	7 47	Panel Action: Create SR TG2-5 PC # 7 Reject but see PC# 47 Reject but see
		Revised Text: 4.10* Cybersecurity. Industrial machinery that is connected to a communication network or is accessible by a communication port and controls any part of the machinery shall comply with the following: (1) A cybersecurity assessment conducted on the connected system to determine cyber risks. (2) Documentation of the assessment shall be provided to those authorized to inspect, operate, and maintain the system. A.4.10 ANSI/ISA 62443-3-2, Cybersecurity risk assessment can be utilized to meet the risk assessment requirement. Other options include the NIST Framework for Improving Critical Infrastructure Cybersecurity, Version 2.0; UL 2900-2-3, Software Cybersecurity for Network-Connectable Products, Part 2-3: Particular Requirements for Security and Life Safety Signaling Systems; and ISO/TR 22100-4, Safety of machinery — Relationship with ISO 12100 — Part 4: Guidance to machinery manufacturers for consideration of related IT-security (cyber security) aspects. communication network referenced does not include closed loop fieldbus networks.
		Statement: Updates to the cybersecurity permission has been to make the risk assessment mandatory but remove the certification requirement. Updating the documentation language to improve clarity on what the output requirements are for the section. Examples of unsafe conditions that can be caused by cyber-attacks are changing overcurrent protection rating of a circuit breaker, arc energy reduction settings, SCADA systems, emergency stop functions, PLC's, HMI's, motor controllers, or Fire Protection Systems. There have been a number of studies done that detail the average industrial control system cyber breach costs large companies an estimated \$5-\$10M per incident with an average of 40-50 cyber-attacks per month. Because of the complexity of certification this issue should be left to the end user.
12.5.5	53	Panel Action: Create SR TG2-6 Reject but see

		Revised Text: 12.5.5 Where ampacity correction for ambient temperature correction for other than 30°C (86°F) or adjustment for more than three current-carrying conductors in a raceway or cable is required, the factor(s) shall be taken from Table 12.5.5(a) and Table 12.5.5(b). Sizing of conductors within control enclosures in wiring harnesses or wiring channels shall be based on the ampacity in cable or raceway. These factors shall apply to Class 1 control conductors covered in Articles 206 and 724 of NFPA 70 only if their continuous load exceeds 10 percent of the conductor ampacity.
		Statement: NEC provides for Class 1 power-limited circuits in article 724 (moved from 725 in 2023 NEC) and Class 1 non-power limited remote control and signaling circuits in a new article 206 published in 2026 NEC. In reviewing Article 206, the conductor ampacity information was lost from the 2020 NEC and is missing from 2026 NEC. A 2029 PI has been written to correct the issue. A TIA for the 2026 NEC is in review. Since the requirement existing in the 2020 NEC and earlier additions, the issue needs to be corrected. The committee recommends including Article 206 now to support the submissions of the public input and TIA. Some of the requirements but not all were put into 300.26 during the 2023 NEC per TIA but deleted for 2026 NEC.
		Panel Action:
		Revised Text:
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TG #	3	
TG CHAIR	Jay Tamblingson	
TG MEMBERS	Chip Boertlein, Andras Szende, Dino Mariz, Daleep Mohla, Ti Nguyen, John Piller, Guido Zotti (SE)	
Second Draft Actions on Public Comments Accept - The recommendation is completely accepted word-for-word. This action will create a second revision that will change the action that was taken at the first draft stage. Reject - This action means that the recommendation of the comment is completely rejected. Reject, but See Related Second Revision (Reject, but See) - The panel created a second revision based on the comment, but the action is not exactly what the submitter recommended. This action is necessary if the panel is doing exactly what the comment asks for, but there are multiple comments that are recommending the same action or a similar action. Reject, but Hold - The action requested will not be implemented for this cycle but will be reconsidered in the next revision cycle. The effect of this action is identical to the “Hold” action of the previous system.		
Section	Public Comment #	Recommended Panel Action, Revision Language and Statement
3.3.41 & A3.3.41	13	Panel Action: Reject but See
		Revised Text: 3.3.41* Energized, Likely to Become ~~;~~ (Likely to Become Energized); Conductive material that could become energized because of the failure of electrical insulation or electrical spacing. [70, ~~2023~~ 2026]
		A.3.3.41 Energized, Likely to Become (Likely to Become Energized). Conductive material is considered “likely to become energized” where it can come into direct contact with live parts as a result of failure of insulation or electrical spacings (e.g., raceways, cable trays, electrical enclosures, motor housings, structural parts supporting electrical conductors).
3.3.51	37	Panel Action: Accept
		Revised Text: 3.3.51 Graphical User Interface. A digital display interface between the operator and the machine ~~-, where a used with~~ <u>associated input devices (e.g. touch screen, touch pad, keyboard, or computer mouse is used-</u> , etc.) to display, configure, or initiate machine action by the selection of on-screen graphical elements (e.g., icons, menus, entry fields).
		Statement: The proposed text provides editorial improvements to clarify the definition of Graphical User Interface.
10.2.2	38	Panel Action: Accept

		Revised Text: Pushbutton actuators and action initiating icons of color graphical ~~interface devices shall~~ <u>user interfaces shall</u> be color-coded in accordance with 10.2.2.1 through 10.2.2.6. Statement: Editorial correction to properly reference the defined term "graphical user interfaces".
10.3.1	39	Panel Action: Accept Revised Text: 10.3.1 Modes of Use. Indicator lights and icons of color graphical <u>user</u> interfaces shall provide the following information: (1) Indication to attract the operator's attention or to indicate that a certain task should be performed. The colors RED, YELLOW (AMBER), GREEN, and BLUE are normally used in this mode. (2) Confirmation of a command or a condition, or the termination of a change or transition period. The colors BLUE and WHITE are normally used in this mode. GREEN shall be permitted to be used in some cases. Statement: Editorial correction to properly reference the defined term "graphical user interface".
10.7.2.4	40	Panel Action: Reject but See Revised Text: ~~Emergency stop switches shall not be flat switches or graphic representations on graphical user interfaces~~ <u>Flat switches, membrane function keys, or action-initiating icons of graphical user interfaces shall not be used as emergency stop devices.</u> Statement: The revised text clarifies that flat switches, membrane keys, and icons on graphical user interfaces shall not be used as emergency stop devices. The revised text does not prohibit displaying the status of emergency stop devices on a graphical user interface. Editorial corrections were made to the submitted comment.
10.8.2.3	41	Panel Action: Accept Revised Text: ~~Emergency~~ <u>Flat switches, membrane function keys, or action initiating icons of graphical user interfaces shall not be used as emergency</u> switching off devices ~~shall not be flat switches or graphic representations on graphical user interfaces.~~ Statement: The revised text clarifies that flat switches, membrane keys, and icons on graphical user interfaces shall not be used as emergency switching off devices. The revised text does not prohibit displaying the status of emergency switching off devices on a graphical user interface.
		Panel Action: Revised Text: Statement:

TG #	4	
TG CHAIR	Heath Garrison	
TG MEMBERS	George Schreck, Jim Morrison, Matthew Stolspart, Marco Tacchini, Simone Parot, Ron Borowski, Glenn Merrell, Paul Dobrowsky	
Second Draft Actions on Public Comments		
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Section	Public Comment #	Recommended Panel Action, Revision Language and Statement
5.1.13	14	Panel Action: Action taken with PC56 that will address this CC comment.
	In the cart – 34, 56, 55, 20	Revised Text:
		Statement: <i>CC Comment – NOTE: The following CC Note No. 5 appeared in the First Draft Report on First Revision No. 14.</i> <i>The committee is asked to clarify if these are separate products and if both products must be listed to be used? Or if it is either product if used, must be listed at 5.1.13.1(5).</i>
5.1.13	56	Panel Action: Create SR

	In the cart – 34, 14, 55, 20 Revised Text: 5.1.13.1 <i>The following circuits shall not be required to be disconnected by the machine supply circuit disconnecting means:</i> (1) <i>Lighting circuits for lighting needed during maintenance or repair</i> (2) <i>Circuits supplying receptacles for the exclusive connection of repair or maintenance tools and equipment (e.g., hand drills, test equipment)</i> (3) <i>Undervoltage protection circuits that are only used for automatic tripping in the event of supply circuit failure</i> (4) <i>Circuits supplying equipment that need to remain energized for satisfactory operation [e.g., temperature-controlled measuring devices, product (work in progress) heaters, program storage devices, inputs, non-motion outputs, displays, and safety interlocks]</i> (5) <i>Circuits supplying listed voltage detection devices or listed absence of voltage testers if identified for use on the line side of the disconnecting means.</i> 5.1.13.2 <i>Excepted circuits shall be provided with all of the following:</i> (1) <i>A disconnecting means, isolating transformer, and overcurrent protection mounted in an enclosure adjacent to or within the control enclosure containing the machine supply circuit disconnecting means</i> <i>Exception: This requirement shall not apply to circuits containing voltage detection devices or absence of voltage testers, provided the supply circuit conductors do not extend beyond the enclosure containing the machine supply circuit disconnecting means.</i> (2) <i>Line side (of the machine supply circuit disconnecting means) supply circuit conductors, when internal to the control enclosure, that are separate from and do not share a raceway with other conductors and that are encased in a raceway if they are longer than 460 mm (18 in.)</i> 5.1.13.3 <i>The control interlocking circuits shall be capable of being disconnected at the control panel from which they are sourced.</i> 5.1.13.4 <i>Where the excepted circuits are not disconnected by the machine supply circuit disconnecting means, all of the following requirements shall be met:</i> (1) <i>A permanent safety sign(s) is located adjacent to the machine supply circuit disconnecting means operating handle(s) indicating that it does not de-energize all the exposed live parts when it is in the open (off) position as in 16.2.4.</i> (2) <i>A statement containing the information from 16.2.4 is included in the machine documentation.</i> (3) <i>A permanent safety sign is located on a nonremovable part inside the control enclosure in proximity to each excepted circuit or each excepted circuit is identified by color as defined in 13.2.4.</i> Statement: <i>Current language is too inclusive and does not clearly identify that either device could be used and both are not required. Changed the "and" to "or" in a couple locations, and removed the statement "used for testing for the absence of voltage", as both of these devices do not perform that function.</i> <i>The application of voltage detection devices or absence of voltage testers should require safety signs where connected on the line-side of the machine supply disconnecting means. These devices may be installed on the load-side, line-side or both, and as such, devices connected to the line-side of the machine supply circuit disconnect should be included per the requirements of 5.1.13.4.</i>	
New A5.1.13.1(5)	55	Panel Action: see PC 56

	In cart PC 34, 14, 56, 20	Revised Text: A5.1.13.1(5) A voltage detection device is used to determine the presence of voltage at the location in the circuit where the device is measuring. Some examples are a permanently-mounted device that is provided with a visual indicator that signals the presence of voltage, or a permanently-mounted device provided with voltage test points that allow for insertion of test instrument ~~meter~~ probes to measure voltage. These devices allow for detecting voltage outside an electrical enclosure, An absence of voltage tester is a permanently mounted device that is used to test for absence of voltage ~~verify a circuit is de-energized~~ prior to opening an electrical enclosure. A test circuit and visual indicators are provided to verify ~~confirm~~ the tester is functioning properly before and after detecting voltage. An adequately rated permanently mounted absence of voltage tester can ~~may~~ be used to test for the absence of voltage of conductors or circuit parts. See NFPA 70E for additional information on the process for determining absence of voltage. See UL 1436 for requirements for absence of voltage testers. Statement: Annex material is needed to explain the use and function of a voltage detection device and an absence of voltage tester. Revisions were made to align with the language used in NFPA 70E. Both terms were added to 5.1.13.1(5).
5.1.13.4	20 In cart – 34, 14, 56, 55	Panel Action: see PC 56 Revised Text: 5.1.13.4 Where the excepted circuits are not disconnected by the machine supply circuit disconnecting means, all of the following requirements shall be met: (1) A permanent safety sign(s) is located adjacent to the machine supply circuit disconnecting means operating handle(s) indicating that it does not de-energize all the exposed live parts when it is in the open (off) position as in 16.2.4. (2) A statement containing the information from 16.2.4 is included in the machine documentation. (3) A permanent safety sign is located on a nonremovable part inside the control enclosure in proximity to each excepted circuit or each excepted circuit is identified by color as defined in 13.2.4. Statement: The application of voltage detection devices or absence of voltage testers should require safety signs where connected on the line-side of the machine supply disconnecting means. These devices may be installed on the load-side, line-side or both, and as such, devices connected to the line-side of the machine supply circuit disconnect should be identified per the requirements of 5.1.13.4.
3.1.0	31	Panel Action: Create SR Revised Text: 3.1.0 ABSENCE OF VOLTAGE TESTER (AVT) – A permanently-mounted test device that is used to test for absence of voltage ~~verify that a circuit is de-energized~~ prior to opening an electrical enclosure that contains energized electrical conductors and circuit parts. An AVT is provided with a test circuit with active indications to test for ~~verify~~ the absence of phase-to-phase voltage and phase-to-ground voltage. AVTs are provided with a test circuit and visual indicators to verify ~~confirm~~ that the tester is functioning properly before and after the process of determining that voltage is absent. ...

		Statement: <i>The term "absence of voltage tester" has been added to 5.1.13(5). The definition for this term appears in UL 1436, the Standard for Outlet Circuit Testers and Similar Indicating Devices, and UL 508A, the Standard for Industrial Control Panels. Revisions were made to align with the language used in NFPA 70E.</i>
3.3.116	33	Panel Action: Create SR
		Revised Text: 3.3.116(A) VOLTAGE DETECTION DEVICE <i>A permanently-mounted device that is provided with a visual indicator that signals the presence of voltage, or provided with voltage test points that allow for insertion of test instrument meter probes to measure voltage.</i>
		Statement: <i>The term "voltage detection device" has been added to 5.1.13(5). This definition is derived from the definitions for "Absence of Voltage Detection Device" and "Presence of Voltage Detection Device," which are found in UL 508A, the Standard for Industrial Control Panels. . Revisions were made to align with the language used in NFPA 70E.</i>
New A5.1.13.1(5)	34 In cart – 14, 56, 55, 20	Panel Action: added to PC 56
		Revised Text: A.5.1.13.1(5) <i>A voltage detection device is used to determine the presence of voltage at the location in the circuit where the device is measuring. Some examples are a permanently-mounted device that is provided with a visual indicator that signals the presence of voltage, or a permanently-mounted device provided with voltage test points that allow for insertion of meter probes to measure voltage. These devices allow for detecting voltage outside an electrical enclosure, An absence of voltage tester is a permanently mounted device that is used to verify a circuit is de-energized prior to opening an electrical enclosure. A test circuit and visual indicators are provided to confirm the tester is functioning properly before and after detecting voltage. An adequately rated permanently mounted absence of voltage tester may be used to test for the absence of voltage of conductors or circuit parts. See NFPA 70E for additional information on the process for determining absence of voltage. See UL 1436 for requirements for absence of voltage testers.</i>
		Statement: <i>Annex material is needed to explain the use and function of a voltage detection device and an absence of voltage tester. Both terms were added to 5.1.13.1(5)</i>
		Panel Action:
		Revised Text:
		Statement:

TG #	5	
TG CHAIR	Palmer Hickman	
TG MEMBERS	Stephen Douglas, Matt Egloff, Dirk Mueller, Stephan Pochon, Michael Steele, Jonathan Johnson, Tim Johnson	
Second Draft Actions on Public Comments		
Accept - The recommendation is completely accepted word-for-word. This action will create a second revision that will change the action that was taken at the first draft stage.		
Reject - This action means that the recommendation of the comment is completely rejected.		
Reject, but See Related Second Revision (Reject, but See) - The panel created a second revision based on the comment, but the action is not exactly what the submitter recommended. This action is necessary if the panel is doing exactly what the comment asks for, but there are multiple comments that are recommending the same action or a similar action.		
Reject, but Hold - The action requested will not be implemented for this cycle but will be reconsidered in the next revision cycle. The effect of this action is identical to the “Hold” action of the previous system.		
Section	Public Comment #	Recommended Panel Action, Revision Language and Statement
	29	Panel Action: Reject
		Revised Text: 12.1.1* General. Conductors, cables, and flexible cords shall be selected for the operating conditions and external influences that can exist. Conductors, cables, and flexible cords shall be identified for their intended use. Only conductors, cables, and flexible cords permitted by NFPA 70 shall be installed.
		Statement: This recommendation contradicts latter allowances such as in 12.9.
	30	Panel Action: Reject But See
		Revised Text: Notes: (1) Conductor types listed in 12.3.1 shall be permitted to be used at the ampacities listed in this table. (2) The source for the ampacities in this table is Table 310.15(B)(16) of <i>NFPA 70</i> . (3) Refer to the NFPA 70 section on Conductor Constructions and Applications if higher temperature insulation types are required.

		Statement: This additional table note provides insight into where information to be used is located if higher temperature insulation types are required than those covered in this table.
	48	Panel Action: Reject But See Revised Text: 2.3.2 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. ASTM B8, <i>Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft</i>, 2011, reapproved 2017. ASTM B174, <i>Standard Specification for Bunch-Stranded Copper Conductors for Electrical Conductors</i>, 2017. ASTM B286, <i>Standard Specification for Copper Conductors for Use in Hookup Wire for Electronic Equipment</i>, 2007, reapproved 2017. ASTM B566, <i>Standard Specification for Copper-Clad Aluminum Wire</i>, 2021, last updated 2025. ASTM B221M-21 <i>Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)</i>, last updated 2021 Statement: This revision adds two additional ASTM publications to 2.3.2.
	49	Panel Action: Reject But See Revised Text: Conductors used for grounding and bonding purposes shall be copper, <u>aluminum and copper-clad aluminum</u>. Statement: This revision allows conductors used for grounding and bonding purposes to be any or all of the materials in this section.
	50	Panel Action: Reject But See

		Revised Text: 12.2.1 Conductor Material. Conductors shall be copper, aluminum or copper-clad aluminum. <u>All conductors shall be terminated in a terminal evaluated for that type of conductor. Conductor AWG 14 and smaller shall be copper.</u> <u>Aluminum and copper-clad aluminum shall comply with the following:</u> <u>(1) Solid aluminum conductors 8, 10, and 12 AWG shall be made of an AA-8000 series electrical grade aluminum alloy conductor material.</u> <u>(2) Stranded aluminum conductors 8 AWG through 1000 kcmil marked as Type RHH, RHW, XHHW, XHHN, XHWN, THW, THHW, THWN, THHN, service-entrance Type SE Style U, and SE Style R shall be made of an AA-8000 series electrical grade aluminum alloy conductor material.</u> <u>(3) For copper-clad aluminum conductors, the copper shall form a minimum 10 percent of the cross-sectional area of a solid conductor or each strand of a stranded conductor. The aluminum core of a copper-clad aluminum conductor shall be made of an AA-8000 series electrical grade aluminum alloy conductor material.</u> <i>Exception: Aluminum alloy busbars, located internal to the enclosure, shall be permitted where suitable for the application.</i> Statement: This revision allows for conductor types other than copper and adds requirements related to its termination and conditions that aluminum and copper-clad aluminum must comply with.
	51	Panel Action: Reject But See Revised Text: Proposed: See NFPA 70 Table 310.16 for the ampacities of copper, aluminum, and copper-clad aluminum conductors not included in Table 12.5.1. Statement: This revision advises that Table 310.16 in NFPA 70 is to be referenced for ampacities not listed in Table 12.5.1.
	54	Panel Action: Accept Revised Text: Note to NFPA staff: Add text as submitted in PC-54 Proposal: Add column for aluminum and copper-clad aluminum in Table 8.2.2.4. Table suggested.

		Statement: This revision adds a new column to the table with header 'Aluminum or Copper-Clad Aluminum'.
		Panel Action:
		Revised Text:
		Statement:
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		Statement:

TG #	6	
TG CHAIR	Kyle Krueger	
TG MEMBERS	Mike Dionne, Gregory Doppke, Robert Gruendel, James Holton, Peter Hoogerdijk, Jason Sroczyński, & Robert Anderson	
Second Draft Actions on Public Comments		
Accept - The recommendation is completely accepted word-for-word. This action will create a second revision that will change the action that was taken at the first draft stage.		
Reject - This action means that the recommendation of the comment is completely rejected.		
Reject, but See Related Second Revision (Reject, but See) - The panel created a second revision based on the comment, but the action is not exactly what the submitter recommended. This action is necessary if the panel is doing exactly what the comment asks for, but there are multiple comments that are recommending the same action or a similar action.		
Reject, but Hold - The action requested will not be implemented for this cycle but will be reconsidered in the next revision cycle. The effect of this action is identical to the “Hold” action of the previous system.		
Section	Public Comment #	Recommended Panel Action, Revision Language and Statement
Global	1	Panel Action: Reject
		Revised Text: None
		Statement: Endorsement of propriety products or services in NFPA standards is prohibited by Section 3.2 of the ANSI/NFPA Patent Policy & Commercial Terms and Conditions (available at NFPA.org/regs). Annex text has been proposed, but the submitted has not indicated which requirement in the standard this annex material should be associated with, nor has a related public input been identified.
3.3.13	11	Panel Action: Reject, but see
		Revised Text: 3.3.13 Branch Circuit (Branch-Circuit). The circuit conductors between the final overcurrent device protecting the circuit and outlet(s) [70, 2026]
		Statement: The current definition may create confusion to code users as it now conflicts with the defined term “branch-circuits” in the NEC. The technical committee revised the definition replacing the word ‘load’ with ‘outlet’. Outlet is a more general and inclusive term and once again the definition of branch circuit aligns with the definition in the NEC.
NEW 3.3.xx Definition of Outlet	None	Panel Action: TBD
		Revised Text: 3.3.XX Outlet. A point on the wiring system at which current is taken to supply utilization equipment. [70, 2026]
		Statement: This SR adds the definition of “Outlet” as extracted from the NEC to aid in clarification in the application of other definitions such as “branch-circuits”.

NEW 3.3.xxx Definition of Utilization Equipment	None	Panel Action: Committee SR
		Revised Text: 3.3.XXX Utilization Equipment. Equipment that utilizes electric energy for electronic, electromechanical, chemical, heating, lighting, or similar purposes. [70, 2026]
		Statement: This SR adds the definition of “Utilization Equipment” as extracted from the NEC to aid in clarification in the application of other definitions such as “branch-circuits” and/or “Outlets”.
7.2.10.1.10	16	Panel Action: Reject, but see
		Revised Text: 7.2.10.1.10 Where a listed self-protected combination controller has an adjustable, instantaneous trip setting, the setting shall not exceed the percentages in specified in 7.2.10.1.10.1 or 7.2.10.1.10.2. 7.2.10.1.10.1 1300 percent of full-load motor current for other than Design B energy efficient motors. 7.2.10.1.10.2 1700 percent of full-load motor current for the following: (1) Design B energy efficient motors (2) Design B premium efficient motors (3) Design BE motors.
		Statement: Section 7.2.10.1.10 was revised into include 2 new next level subdivisions in accordance with the NFPA Manual of Style Section 3.4.5.4. Additionally, new subdivision 7.2.10.1.10.2 has broken the motor types into list format to promote usability.
C.8	35	Panel Action: Reject, but see
		Revised Text: C.8 Robotics. Examples of robots are as follows: (1) Robots that are permanently mounted: (a) Multi-axis articulated arms (b) Cartesian gantry (c) Delta arm (d) Selective compliance assembly robot arm (SCARA) (e) Dual arm
		Statement: A mobile robot itself is outside of the scope of NFPA 79 as such the reference to mobile robots has been deleted from Annex material in C.8.
13.2.4.1	43	Panel Action: Reject, but see

		Revised Text: 13.2.4.1* Ungrounded conductors that remain energized when the main supply is in the off position, shall be identified in accordance with 13.2.4.1.1 through 13.2.4.1.3. 13.2.4.1.1 Ungrounded ac conductors shall be identified with the color ORANGE. 13.2.4.1.2 Ungrounded dc conductors shall be identified with a bicolor combination of ORANGE and BLUE. 13.2.4.1.2.1 The bicolor combination required in 13.2.4.1.2 shall be arranged that: (1) One of the colors covers at least 30 percent but not more than 70 percent of the surface of the conductor's insulation; and (2) The other color covers the remainder of the surface of the conductors insulation. <i>Exception No. 1: Internal wiring on individual devices purchased completely wired</i> <i>Exception No. 2: Where the insulation used is not available in the colors required (e.g., high temperature insulation, chemically resistant insulation)</i> Statement: This section was revised to align with other similar bicolor identification requirements in this standard. Additionally, the section was broken into multiple subsections to accommodate the multiple shall statement requirements in accordance with section 3.4.5.4 of the NFPA Manual of Style.
15.1.1 15.1.2	45	Panel Action: Reject Revised Text: Statement: The submitter did not provide technical substantiation for why this change is necessary. Additionally, the submitter stated that the title to Section 15.1.1 should be "updated to be inclusive" but did not provide revised language for the title.
		Panel Action: Revised Text: Statement:
		Panel Action: