RODE C37.68 Controls Working Group
Meeting Minutes
October 6, 2020 – Via Online Meeting

Chair: Paul Found **Secretary**: Karla Trost

Meeting Minutes

1. Call to Order Paul Found
The meeting was called to order at 1:32PM CDT.

2. WebEx information and 6.3.2 Call for Patents and Copyright Paul Found

3. Introduction of Members and Guests
Self-introductions with affiliations we made via chat.

4. Attendance and Quorum Check Karla Trost
Of 21 members, 19 members (and 11 guests) were present for the first session and 17 members (12 guests) for the second session; Quorum was achieved.

Membership was granted to 1 individual.

5. Approval of Agenda Paul Found
B. Kirkpatrick made a motion to approve.
F. DeCesaro Seconded.
The Agenda was approved.

6. Approval of Previous Minutes Paul Found
It was noted that the Attendance item was incomplete. A revision was needed to enter the correct attendance numbers.

C. Riley made a motion to approve the minutes as amended.
I. Rokser Seconded.

The minutes were approved as amended. Revised minutes have been submitted for posting.

7. Review Action Items Paul Found
- Action item: Paul to work with commenters (Ian Rokser, Brendan Kirkpatrick, Jeff Mizener) to update the definition of a control prior to the draft going out to the Members for review.

        - The definition was shown. It was not in the draft that was previously provided but will be entered into the working document prior to the next release.
- Action Item: Paul to add language to the draft document to include 60068-2-38.
    - Discussion on if the statement "Variant 1 of IEC 60068-2-38 remains" should state 60068-2-30. **Action Item:** P. Found to confirm and update document as necessary.
- The draft document will include a statement such as, "At a minimum, service conditions shall match the relevant equipment standard. If the control is meant to be mounted in a different service condition, the manufacturer shall define the appropriate service conditions." Complete
- Action Item: Request for information from working group participants regarding production testing of the ground lug and control Hi-pot requirements.
    - Subclause 8.10 was presented. There is a preference that the ground lug connection be tested as part of a routine test. The current draft states that torqueing of the ground lug connector is a requirement. Is it reasonable to supply a torque value?
    - Should the ground lug be tested as a routine test? Comments included:
        - The manufacturer should check their process.
        - Should we provide a torque value for only one item in the standard?
        - A comment was made that the 100 Amp requirement may raise a safety hazard or restrict where/how a control can be built or tested. It would be preferable to have this as a design test.
            - A follow-up comment that the test as written could use a specific meter with low voltage and in a safe condition.
        - Question – what gap are we trying to solve? Has there been an issue with Manufacturer grounding quality?
            - One commenter noted that they had seen a ground connection that seemed good but was on a painted surface and was not actually a good connection.
        - Recommendation that a simple VOM meter should work.
        - Are there any manufacturers who do this today? One manufacturer said they do use a 100 Amp test to check this type of connection. But a design test is needed to define what the maximum ratings should be.
    - Discussion on including a torque value:
        - This will be design dependent and it would be difficult to select one torque value. The way the sentence is written the torque value would apply to all ground locations in the control – the ground lug, the ground screw on the relay, as well as other ground connections.
        - Can we make an informational reference to the standard that was listed?
        - Comment made on the burden of requiring specific torque values for each ground connection.
    - If there is a short inside of the cabinet, the grounding and wiring must be able to handle it. P. Agliata volunteered to do some research and return information to the WG.

- Suggestion that UL 467 (Construction and Test Requirements) might be useful.
- **ACTION ITEM:** P. Found to work with: C. Hastreiter, P. Agliata, F, Soulard, and I. Rokser to draft new language.

8. New Items

- Comments from the WG Review (we received close to 200 comments (Editorial/Technical/General))
- 8.3: Dielectric Tests – "Some interfaces to apparatus are not hipot safe" – More information is needed. No comments in the meeting.
- 8.7: Separately shipped interfaces – What other components could be viewed as part of the integrated system? The intention is to ensure that equipment that is related to the control (even if part of the apparatus) be tested for functionality.
  - Could the main sentence in this subclause be moved to the general section for Chapter 8?
  - Other "integrated components" might include radios or programming cables.
  - Comment entered in chat: What about control cable interfaces being tested with separately shipped control cables? We had issues with control interfaces having connection issues with control cables.
  - Possible cross reference to 37.30.6 (Guide for Motor Operators for HV Air switches)
- 7.1.1: No one has a problem making it a reference or removing it completely.
- 7.5: C37.74 and C37.62 Draft refer to C37.100.1 which has a solar clause.
  - A question was raised about controls that are connected to other types of apparatus not related to C37.60.
    - Per C37.74 it refers to common clauses. A. Bonner stated that C37.62 Draft also refers to common clauses. In 100.1 indoor is not applicable, outdoor 1044 W/m^2 needs to be accounted for with some conditions.
    - It was pointed out that we need to take into account the impact of the increased temperature on internal components (such as bus bars).
  - Recommendation that we relate to Ambient temperature plus the solar radiation increase used in the apparatus standards OR +15C.
  - **Action Item:** K. Trost to rewrite.
- 7.5 IEC 60068-2-30 lists upper temperature as 55C. Request to change to the apparatus rating
  - It was pointed out that IEC 60068-2-30 standard includes 2 test methods. One uses 40C, and the other one uses 55C. The tests have defined humidity cycle parameters based on the temperature. If we change the temperature to the products rated temperature, we will need to recalculate the other parameters.
  - It was recommended to leave the temperature as is.
- 7.6.1.1 Commenter stated that this limits Pole Mounted applications to Publicly Accessible.

- After Group conversation, it was determined that the general format is correct (7.6.1 is for Publicly Accessible, 7.6.2 is for Non-Accessible), but that means that the document needs a Non-Accessible Pole mounted application.
- Based on the discussion, it was agreed that the language for publicly accessible controls can be simplified.
- **Action Item:** K. Trost will add Non-Accessible pole mounted and simplify the 7.6.1 verbiage.

- 7.6.2.1 Request to change Dry vault to IP33
  - In the Fall 2019 meeting, the Working Group made a decision to make the Dry vault rating IP63.
  - It was noted that would make an inaccessible Dry Vault control have a higher rating than a padmounted control.
  - One user commented that in their dry vaults only utilities or users have access and moisture is not required, therefore IP6X seems extreme.
  - Another user requested that we define a "Dry Vault".
  - During conversation, it was explained that some dry vaults are in above ground building vaults and/or underground where the control will not be submerged. For others, the vault could be underground and water could fill a portion of the vault but they would dry out.
    - One customer stated that any underground vault may be contaminated. (IP 33 can only be in a protected environment)
  - It was noted that a user specification for Dry Vault "in a building, only accessible by utility, water pipes were not allowed to be routed around the equipment."
  - **Action Item: K. Trost will work with T. Johnson and F. Soulard to define a dry vault and determine if IP33 is applicable for that definition.**
- Section 6: **F. Soulard is calling for volunteers to help answer/address the comments.**
  - 6.3 Commenter stated, "The switch between remote/local operations…." For voltage regulator controls, switching to local operations disables automatic operations.
    - Intent was to avoid the operation of the equipment when the control is changed from Remote to Local or vice verses.
    - Note: The document did not define Local, Remote, Automatic, or Manual operation.
    - Is this an operational requirement and not a product requirement?
    - An example was given where the control was placed into the remote mode and if the central control was issuing a command to change state, shouldn't it change state?
    - It was pointed out that a Voltage Regulator control has a specific operation for entry into the Local mode.
    - Discussion – If it is switched from Remote to Local, the control should be removed from Automatic. Examples given of equipment where you don't want it operating when someone is local.

- What is an acceptable operation (follow through with protective or programmed options?)
    - **Action Item:** F. Soulard to work with T. Johnson, A. Dhawan, F. DeCesaro, K. Trost to draft language for Subclause 6.3.
- 6.6.4: A commenter requested that the standard be dated.
    - It was noted that our previous policies have been "for simplicity, we do not date unless there is something specific in that version that needs to be referenced."
    - Specific to IEC 61000-4-11 – in this specific example this should be a design test, not a design requirement. In that case, as this Working Group does not have direct involvement in the IEC standards, we should use a dated reference to protect against potential changes.
    - It was also noted that is simplifies testing if when referencing a specific clause, we use a dated reference as the clause numbering can change over time.
- Discussion about the fact many comments were received that many of the items in Section 6 are Design Tests in Section 7. These need to be reviewed to confirm that only the Design Requirements are in Section 6.
    - **Action Item:** F. Soulard, K. Trost, and I. Rokser to help align Section 6 and Section 7.

- Project Milestones
    - Resolutions/ Draft: Fall 2020
        - Goal to complete review of WG comments by November 30, 2020
        - It was recommended that we may want to do another WG ballot.
    - Form the Ballot Pool (requires a minimum of 15 Days to form)
    - 1st Ballot: January 2021
    - Comment Resolution: Spring 2021
    - 2nd Ballot (if needed): Summer 2021
    - Final Resolutions: Fall 2021
    - PAR Expires December 31, 2021 (Rev Com submittal due in October 2021)

9. Next meeting: is scheduled to take place in Charlotte, NC with the Spring 2021 Switchgear Committee meeting.

10. Adjournment.

The meeting was adjourned at 4:48PM CDT.

Annex 1: Attendance

Role	First Name	Last Name	Company	10/6/2020
Chair	Paul	Found	BC Hydro	X
Member	Peter	Agliata	Hubbell Power Systems	X
Member	Edwin	Almeida	Southern California Edison	X
Member	Chris	Ambrose	Federal Pacific (Div. of Electro-Mechanical Corp.)	X
Member	Katherine	Cummings	G&W Electric	X
Member	Frank	DeCesaro	DeCesaro Consulting Services	X
Member	Anil	Dhawan	ComEd	X
Member	Mark	Feltis	Schweitzer Engineering Laboratories, Inc	X
Member	Christopher	Hastreiter	Eaton	X
Member	Travis	Johnson	Xcel Energy	X
Member	Brendan	Kirkpatrick	Southern California Edison	X
Member	Benson	Lo	Toronto Hydro	X
Member	Donald	Martin	G&W Electric Co.	X
Member	Peter	Meyer	S&C Electric Company	X
Member	Jacob	Midkiff	Dominion Energy	X
Member	Stephen	Pell	Siemens	
Member	Caryn	Riley	Georgia Tech/NEETRAC	X
Member	Ian	Rokser	Eaton Corp	X
Member	Francois	Soulard	Hydro-Quebec	X
Member	Nenad	Uzelac	G&W Electric	
Secretary	Karla	Trost	G&W Electric	X
Guest	Thomas	Ballard	Hubbell Power Systems	X
Guest	David	Beseda	S&C Electric Co.	
Guest	Antone	Bonner	PAS Consulting	X
Guest	Dan	Busilan	Dominion Energy	X
Guest	Mohit	Chhabra	S&C Electric Company	
Guest	Randall	Creach	AZZ Switchgear Systems	
Guest	David	Dart	NOJAPower	X
Guest	Edgar	Dullni	retired	
Guest	Ken	Edwards	FirstEnergy Corp.	
Guest	nadia	El khattabi	Hydro-Quebec	
Guest	Michael	Flack	Southern Company Services, Inc.	
Guest	Jeffrey	Gieger	Thomas & Betts	
Guest	Peter	Glaesman	PCORE Electric Company, Inc.	
Guest	Ilya	Glinsky	Southern California Edison	X
Guest	Sahadev	Gohil	AZZ Switchgear Systems	X
Guest	Jodi	Haasz	IEEE	
Guest	Robert	Hanna	ABB INC	
Guest	Christian	Heinrich	Siemens AG	
Guest	Harold	Hirz	G&W	X
Guest	John	Kaminski	Siemens	

Guest	Ryan	Kowdley	Pacific Gas & Electric	
Guest	James	Lagree	Eaton	
Guest	Robert	Lau	nVent Hoffman	
Guest	Bradley	Lewis	AEP	
Guest	Benjamin	Marx	Sargent and Lundy	
~~Guest~~ Granted Member Status	Jeff	Mizener	Siemens Industry, Inc.	X
Guest	Ashley	Moran	IEEE Standards Association (IEEE-SA)	
Guest	Christopher	Morton	Powertech Labs Inc.	X
Guest	Roberto	Olivares	Siemens	
Guest	Al	Pruitt	The Durham Company	X
Guest	Larry	Putman	Powell	
Guest	Vaidyanathan	Ramasethu	G&W Electric	X
Guest	Mark	Roberson	AZZ/Calvert	
Guest	Kevin	Rogers	University of Wisconsin	
Guest	Kevin	Sippel	Eaton Electric	
Guest	Erin	Spiewak	IEEE	
Guest	Srikant	Venkatesh	Schweitzer Engineering Laboratories	X
Guest	William	Walter	We-Energies	X
Guest	John	Webb	ABB	
Guest	Michael	Whitney	CSA America	
Guest	Robert	Wolf	Hubbell Power Systems, Inc.	