

C37.74 Working Group Meeting Agenda

April 3rd, 2023 10:00 AM – Virtual.

Chair: Kennedy Darko

Secretary: Travis Johnson

Meeting Agenda

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|----|--|------------|
| 1. | Call to Order | K Darko |
| 2. | Call for Patents | K. Darko |
| | a. Patent Slides | |
| | b. Copyright Slides | |
| 3. | Introduction of Members and Guests | K Darko |
| 4. | Attendance and quorum check | T. Johnson |
| 5. | Approval of Agenda | K. Darko |
| 6. | Approval of Previous meeting minutes | T. Johnson |
| 7. | Action Items | K. Darko |
| | I. Quick project plan review | |
| | II. Editorial and Technical proposals / reviews draft D1.3 | |
| | • Review presentation | |
| 7. | Next Meeting: Virtual | |
| 9. | Adjournment | |

Chair called to order at 10:05AM CDT.

The patent and copyright slides were sent in advance of the meeting and shown at the meeting. No items were brought to the chair's attention.

The previous meeting minutes will be held until the clearwater meeting.

The agenda was shown but was not voted on due to the number of members present.

Sub-clause 7.7.7

C. Riley and K. Darko presented options for PD tests pre-test stress voltage.

 #1 – Using the same prestress levels as C37.62

 #2 - Pre-stress = Upre-stress = $1/3 \times U_r/1.73$.

The ad hoc team recommends that using Option 2 as it would be less than or equal to the terminating component standards.

Discussion on how this compares to the current version of the standard.

Discussion on if the pre-stress levels should be higher. The point of reference was a holdover from overhead lines and is generally not preferred for solid dielectric insulation. The ad hoc team is going higher than the terminations (by percentage).

If the pre-stress value is driven by expectations on the system, do these values meet the expectation?

Is the plan to leave a note about testing a portion of the unit (vs the entire switch). At this time, it is planned to keep the note.

This topic will be revisited at the next meeting in Clearwater.

Tables 7 & 8 (Reconciliation) – proposal from H. Bannink

Table 7 — Tests sequences for switched way, fused switch way, fused-load break way and ground switch^c

| Test Sequence No. | Test description | Number of operations or applicable | | | | | Test procedure |
|-------------------|--|------------------------------------|------------------|----------------------|---------------|-------------------------------|--|
| | | Switched way | Fused-switch way | Fused-Load break way | Visible Break | Grounding switch ^a | |
| 1 | Dielectric preconditioning, when applicable | — | X | X | | — | 7.4.1 |
| 2.1 | Load switching current test $\geq 100\%$ rated load | 10 | 10 | 5 | | — | 7.7.5.4 |
| 2.2 | Load switching current test 40%–60% rated load | 30 | 30 | — | | — | |
| 2.3 | Load switching current test 5%–20% rated load | 10 | 10 | 5 | | — | |
| 2.4 | Loop switching current test $\geq 100\%$ rated loop | 10 | 10 | — | | — | 7.7.5.5 |
| 2.5 | Cable-charging switching current test $\geq 100\%$ rated cable charging | 20 | 20 | 5 | | — | 7.7.5.6 |
| 2.6 | Transformer magnetizing current switching test $\geq 100\%$ rated unloaded transformer (may be waived under conditions of 7.7.5.7) | 20 | 20 | 20 | | — | 7.7.5.7 (may be waived under conditions) |
| 3 | Mechanical operation tests None (de-energized) | 50 | 50 | — | | — | 7.7.10.1 |
| 4 | Peak current withstand test | 3 sets | 3 sets | — | | 3 sets | 7.7.4.3 |
| 5 | Fault-making | 3 | 3 | 3 | | 3 | 7.7.4.6 |
| 6 | Rated power-frequency withstand production test voltage test (Table 1 Column 6: production test voltage) | X | X | X | | X ^b | 7.7.2.4 |
| 7 | Verification of ability to carry rated current | X | X | X | | — | 7.7.6 |
| 8 | Mechanical operation test None (de-energized) | 200 | 200 | 10 | | 100 | 7.7.10.2 |

Discussion:

In general, the team is supportive of the proposal.

Now that the values are part of the applicability table, should we change the “X” to some other item (or at least, add a key) because they are not as easy to understand.

Submersion test (7.9)

The participants reviewed the language from C37.62 for applicability.

General sub-clause –

Change from Fault Interrupter to Load-Interrupter

Discussion on if load-interrupter is “limited” or if it should be made more generic.

Discussion on possible language.

Proposal to use “switched ways, protected ways, and subcomponents”.

The final language became:

“The intention of this subclause is to adequately test the submersible DSG as an entity while recognizing the modularity...

Kennedy/ Travis copy from document.

Test Requirements –

Need to update from “Tripped open and remotely reset” to proper terminology for load-interrupters.

Discussion on the best language to use. Possibilities of Operated or Open, Closed, and Ground). It would be best to clarify that operation is through all positions.

Proposal – “The device must be cycled through all positions no less than 3 times per day over a 10-day test period.”

Device condition after test –

Use DSG instead of “FI”.

The reference to the opening times is not applicable to C37.74 as currently written.

Therefore, the chair proposed that the closing and opening speeds pre- (or per specifications) and post- test be compared.

Discussion on the 80% withstand test. Decided to add “design” before test.

Will return to this subclause at Clearwater to discuss when the speed measurements should be taken (if while submerged is required.)

New mechanical duty test clause from previous meeting

Reviewed the addition. There were some editorial.

May need to change this to Table 7 (remove Table 8) due to the new combined table.

The meeting was adjourned at 11:27AM CDT.

Participants included:

E. Almeida (M) – ½ way through the meeting.

H. Bannink (M)

D. Beseda (M)

K. Darko (Chair)

F. Decesaro (M)

R. Jain (M)

T. Johnson (Sec)
D. Martin (M)
C. Riley (M)
I. Rokser (M)
V. Savulyak (M)
J. Stemmerich (M)
K. Trost (M)

Guests?

K. Busch
J. Neujahr
J. Kapitula (ABB)