

Minutes
Task Force: Aging of Lubricants Virtual Meeting
9:00 AM – 10:30 AM (EDT), September 23, 2022

1. Call meeting to order Jack Harley
Meeting called to order at 9:04 AM (EDT).

2. Introduction of Members and Guests, and attendance D. Edwards
 - Participants self-introductions with affiliations
 - Participants self-introductions with affiliations made.

3. Quorum verification D. Edwards
 - Quorum met.
 - 12 of 22 members present at beginning of meeting.
 - 11 guests present.

4. Approval of Meeting Agenda Jack Harley
 - Agenda approved by consent.

5. Call for patents, copyright issues Jack Harley
 - Discussed Copyright & Patent policies.
 - No issues identified.

6. Minutes D. Edwards
 - [Virtual August 26, 2022](#)
 - Approved by consent.

7. Scope for PAR review. Jack Harley
 - No changes.

8. Title Jack Harley
Drafted title for discussion:

Guide For Provides Methodologies to Demonstrate the Expected Life of Lubricants Used in a Switching Devices

Updated from previous title, from "...Devices" to "... Device".
Change proposed, to add "(to reduce friction)" after Lubricants. Decision: Do not add "(to reduce friction)" or similar wording. This issue is discussed in the Scope.

9. Purpose statement

No draft yet.
For now, move forward without a purpose statement. However, good to include explanation of why in the document.

Suggestions, instead of detailing "why" issues in the Purpose statement, provide in the Introduction of the document and in the PAR "Need for standard" section.

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10. PAR (Placeholder)

Jack Harley

Plans was for Chair and Secretary to have draft for discussions at Fall 2022 Conference in Burlington, VT.

Changed at end of meeting. Goal is for Chair and Secretary to draft PAR and conduct electronic ballot – see item 13.

11. Develop concept for Table of Content

Jack Harley

Discussed drafted TOC (attached below).

- Add Introduction
- 4. Identification: Types of devices, e.g. chains, sprockets, etc. and environment and applications.
- 5. General considerations
 - This section to provide background for the structure of this Guide.
- 6. Aging methods
 - Potential for “experienced based aging”. Issues to be considers include:
 - Environmental details
 - Testing, such as oxidation evaluations
 - Cycling should be considered.
- 7. Test procedures:
 - Original design tests requirements
 - Comparisons to benchmark test results
- 8. Test objects
- 9. Aging modes (duty cycles)
 - How to handle extremes of rarely operated vs frequently operated equipment? Suggested words:
 - aperiodic, cyclic, infrequent
 - vs
 - periodic, frequent, continuous
- 10. Diagnostic factors
 - Usable life may be tied to “Ruler” measures considering the amount antioxidant remaining at a point in time.
 - Will need to clarify different aging evaluations for inorganic vs organic lubricants.
- 11. Interpretation of data
- 12. Test Reports
- Recommendation: Add Case Studies Annex

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12. Review methodologies

- Other standards
Note: Request for reference to the following documents has been made (2022-08-19 to Jennifer Santulli - IEEE PES Switchgear Program Manager).
 - Reference to IEC 60947-1 (2020-04), LV Swgr and Controlgear - Part 1 General Rules
 - Reference to EN 50326 (2002-08), Conductors for overhead lines - Characteristics for greases
- Arrhenius equation concepts
- Add Case Studies – Actual equipment “how to’s” with details.

13. Future discussion points

Jack Harley

- Push to draft PAR and ballot to meet October 13, 2022 NesCom submittal deadline.

Next meeting: Scheduled (check PES Swgr Conference Schedule) for Monday October 18, 2022 from 10:15 to 12:00 PM – Burlington, VT IEEE PES Switchgear Standards Committee Conference.

14. Adjourn

Jack Harley

The meeting agenda was completed. Meeting adjourned at 10:18 AM (edt).

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Role	LastName, FirstName	Company	9/23/2022
Chair	Harley, John	FirstPower Group LLC	X
Secretary	Edwards, Doug	Siemens Industry, Inc.	X
Member (Voting)	Burse, Ted	Powell Industries, Inc	X
Member (Voting)	Carne, Clint	Schneider Electric	X
Member (Voting)	Eftink, Emily	Burns & McDonnell	
Member (Voting)	Flowers, Keith	Siemens Industry, Inc.	
Member (Voting)	Grahor, Lou	Eaton Corporation	X
Member (Voting)	Hartzel, Ronald	Eaton Corporation	X
Member (Voting)	Jarnigan, Christopher	Southern Company Services	X
Member (Voting)	Lanning, Scott	S&C Electric	
Member (Voting)	Leccia, Brad	Eaton	X
Member (Voting)	Livshitz, Albert	Qualus Power Services	
Member (Voting)	Marzec, Peter	S&C Electric Co.	
Member (Voting)	Moser, Darryl	ABB	X
Member (Voting)	Orosz, Miklos	Myers Controlled Power	
Member (Voting)	Reid, Laura	Hubbell Power Systems	
Member (Voting)	Ricciuti, Anthony	Eaton Corporation	X
Member (Voting)	Riffe, Dave	Westinghouse Electric Company	
Member (Voting)	Rohr, Richard	Powell Electrical Systems	
Member (Voting)	Ward, Jeffrey	Doble Engineering Company	X
Member (Voting)	Webb, John	ABB	X
Member (Voting)	Weishuhn, William	ABB	
Member (Non-Voting)	Ambrose, Chris	Federal Pacific	
Member (Non-Voting)	Barfield III, Walter	Electric Power Research Institute	
Member (Non-Voting)	Blake, Randy	Hubbell	
Member (Non-Voting)	Bray, Elizabeth	Southern Company	
Member (Non-Voting)	Brunke, John	Power Engineers	
Member (Non-Voting)	Christian, Michael	ABB	X
Member (Non-Voting)	Di Lillo, Patrick	Consolidated Edison Co. of NY, Inc.	X
Member (Non-Voting)	Dunne, David	Schneider Electric	
Member (Non-Voting)	Dwyer, Bernie	PECO	
Member (Non-Voting)	Esco, Tanner	Eaton Corporation	
Member (Non-Voting)	French, Christopher	Eaton Corporation	
Member (Non-Voting)	Hall, John	Tennessee Valley Authority	X
Member (Non-Voting)	Hawkins, Tom	Siemens Industry, Inc.	
Member (Non-Voting)	Hetzer, Matthew	PEPCO	
Member (Non-Voting)	Hohnstadt, Benjamin	DTE	
Member (Non-Voting)	Hutchins, Roy	Southern Company Services	
Member (Non-Voting)	Irwin, Todd	GE Grid Solutions	
Member (Non-Voting)	Jala, Roopendra Hemanth	S&C Electric Company	
Member (Non-Voting)	Keels, Thomas	kEElectric Engineering	
Member (Non-Voting)	May, Steven	Southern Company	X
Member (Non-Voting)	Meyer, Peter	S&C Electric Company	X
Member (Non-Voting)	Monroe, Andrew	Southern Company	

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Member (Non-Voting)	Nenning, Andrew	Omicron Electronics	X
Member (Non-Voting)	Owens, John	3M	
Member (Non-Voting)	Owens, Mary	Eaton	
Member (Non-Voting)	Parks, Owen	ABB	X
Member (Non-Voting)	Peterson, Alan	Utility Service Corporation	
Member (Non-Voting)	Peterson, Andrew	ABB	
Member (Non-Voting)	Rakus, Paul	Eaton	X
Member (Non-Voting)	Salinas, Alex	Doble/Vanguard	X
Member (Non-Voting)	Shiller, Paul	FirstPower Group LLC	X
Member (Non-Voting)	Sippel, Kevin	Eaton Electric	
Member (Non-Voting)	Stemmerich, Joe	Trayer Engineering Corp.	
Member (Non-Voting)	Sullivan, Paul	Dupont	
Member (Non-Voting)	Thomas, Christo	Schneider Electric	
Member (Non-Voting)	Weeks, Casey	Siemens Energy	X
Member (Non-Voting)	Weisker, Jan	Siemens Energy	
Member (Non-Voting)	Wen, Jerry	BC Hydro	
Member (Non-Voting)	Worthington, Charles	Hubbell Power Systems	
Member (Non-Voting)	Zehnder, Lukas	Hitachi	
Member (Non-Voting)	Zhang, Wei	Hitachi	
Member (Non-Voting)	Zia, Danish	UL LLC	