Institute of Electrical Power Systems
in cooperation with FF TU Graz

Bachelor Thesis

Requirements for emergency power supply in practical firefighting operations

Situation and motivation

As a result of the energy transition, more and more photovoltaic systems are being installed on roofs, some of them in their entirety. This fact leads to challenges in the firefighting attack in case of an underlying fire. Since the photovoltaic panels cannot be switched off per se and could therefore be under voltage during a firefighting attack, the question of personal safety during a firefighting attack via the roof, e.g. using a rotating ladder, arises here. The thesis should describe the existing literature and result in a typical test setup for verification.

Tasks in the scope of the thesis

- Literature research
- Elaboration of the theory of PV in a fire situation
- Quantified Risk Analysis
- Investigation of personal protection during various firefighting attacks
  - Conventional methods
  - Fog-nail / extinguishing lance
  - Extinguishing drill
  - Further possibilities
- Development of a concept for field measurements
- If appropriate, execution of field measurements

Organizational

This work is accomplished at the Institute of Electrical Power Systems, the subject is worked on in cooperation with the "Freiwillige Feuerwehr TU Graz" (Volunteer Fire Brigade TU Graz).

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ELECTRICAL POWER SYSTEMS TU GRAZ

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