



Canadian Standards Association
Mississauga, Ontario
To the Part I Committee

Subject No. 2554

Chair: Mike Anderson

Date: October 15, 2002

Title: Exemption from Certain Requirements, Rule 50-003

Submitted by: Roy Hicks of Ontario Hydro on July 21, 1995

Proposal: Add a new Rule 50-003 to read as follows:

50-003 General. Where the only source of electric power to a single dwelling is a solar photovoltaic system with an output rating not exceeding 1500 V!A, the following Rules are deemed not to have application:

- (a) Rule 8-200 (1)(a)(i), (1)(a)(ii), and (1)(b); and
- (b) Rules 26-700 (2), (3), (6), (9), (10), (11), (18), (20), (21), and (24); and
- (c) Rules 26-704 (3), (7), (8), (9), (10), and (12).

and re-number the subsequent Rules.

Reasons for Request: We have cottages where the only source of power is solar photovoltaic. The Code as now written would require a 60 A or 100 A service, receptacles every 3.6 m along the walls, a receptacle on the porch, a receptacle for the refrigerator, split receptacles, receptacles in the halls, receptacle in laundry, utility and basement areas, in the washroom, outdoors, in a garage and for the central vacuum system. It would also require branch circuits for the split receptacles, the laundry room, the utility room, the outdoor receptacles and the central vacuum. It also requires use of a CSA Configuration 5-15R on a DC system, where to avoid someone plugging an AC only appliance into a DC circuit, use of another configuration may be desirable.

If there is only 1500 watts available, this seems hardly necessary. Elimination of the necessity to comply with the identified requirements will provide some direction of the PV industry on a matter where deviation is granted on a case by case basis for the majority of the installations currently occurring.

Where the installed capacity exceeds 1500 watts, there will still have to be judgement on the extent to which the identified rules apply. However, given current technology, the proposal covers the majority.

Removal of the necessity to comply with the identified rules doesn't forbid the provision of the identified receptacles and branch circuits - it just doesn't make them mandatory.

This request grew out of an Electrical Safety Code/Photovoltaic Workshop on March 6, 1995 attended by a number of PV system installers/suppliers. The industry indicated it will be supplying a number of proposed code amendments. This particular one is the result of inspectors developing answers to specific questions raised at the meeting.

Chair's Comments: I agree that there are situations where there is a need to use the Code Rules with discretion. However, I think Rule 2-030 is there for that reason and should be used rather than go through the process of revising the Code.

There are many instances where the supply source is such that a 100 A service seems a little silly. A farm or acreage or cottages supplied with a 3 KVA or 5 KVA transformers are representative examples. While this is not the only concern addressed in the proposal, it is indicative of the number of cases where an inspector needs to be flexible in the application of the Code.

I feel that Rule 2-030 provides that flexibility.

New Chair's Comments (SECOND ROUND): Since the Subcommittee has changed considerably since this Subject was originally sent, I would like to start fresh. I agree with the Chair's Comments (First Round).

Chair's Comments (THIRD ROUND): Based on comments from the Subcommittee I would like to amend the first round proposal to read:

50-003 General. Where the only source of electric power to a single dwelling is a solar photovoltaic system with an output rating not exceeding 1500VA, the following Rules are deemed not to have application:

- (a) Rule 8-108(1)
- (b) Rule 8-200(1)(b)
- (c) 26-702(7),(8),(9),(13),(20),
- (d) 26-704

Add an Appendix B Note to Rule 50-003:

Although kitchen outlets and circuits as per Rules 26-702 and 26-704 are not mandatory where the power supply to the dwelling unit is 1500 VA or less, it is recommended a minimum of one outlet be installed at each kitchen workspace and that these outlets be on a separate circuit or circuits.

Rationale:

(a) With a small independent power supply and minimal branch circuit wiring there is no need for the minimum number of branch circuits in Rule 8-108(1), Rule 8-108(2) will suffice.

(b) This eliminates the requirement for minimum 60 or 100 amp service, but still requires a "service" of sufficient size to accommodate basic minimal load plus any unusual load that may be present. Even though the power supply is 1500 VA or less, the calculated "service" size (branch circuit distribution) will be at least 5000 VA allowing some flexibility for potential future increase in the size of the power supply.

(c) & (d) This eliminates the requirement for special purpose outlets and circuits that are not necessary in this type of dwelling unit. These outlets and circuits that are not necessary in this type of dwelling unit. These outlets and circuits may still be installed voluntarily. The new

Appendix B Note to this Rule recommends the installation of several general-purpose outlets in the kitchen workspace.

Subcommittee Deliberation: From the ballots received, 6 agreed with comments and 1 disagreed. The comments basically asked to change the rule references to reflect the rules in the 2002 CEC. In response to the 1 disagreement, there were other portions of the CEC that omit sections of the Code to suit the industry without taking away the electrical safety. With the cost of photovoltaic most installations seem to be in remote cottage areas where electrical power consumption is less and there is no need for the requirements mandated in Sections 8 and 26.

Subcommittee Recommendation: That a new Rule 50-003 be added as follows:

50-003 General. Where the only source of electric power to a single dwelling is a solar photovoltaic system with an output rating not exceeding 1500VA, the following Rules are deemed not to have application:

- (a) Rule 8-108
- (b) Rule 8-200
- (c) Rules 26-710(d), 26-710(f), 26-712(d), 26-712(e), 26-714(c)
- (d) Rules 26-720, 26-722(a) to (e)

Add an Appendix B Note to Rule 50-003:

Although kitchen outlets and circuits as per Rules 26-710, 26-712, 26-720 and 26-722 are not mandatory where the power supply to the dwelling unit is 1500 VA or less, it is recommended a minimum of one outlet be installed at each kitchen workspace and that these outlets be on a separate circuit or circuit.