



STATE OF WASHINGTON
STATE BUILDING CODE COUNCIL

May 2018
Log No. _____

1. State Building Code to be Amended:

- | | |
|---|---|
| <input type="checkbox"/> International Building Code | <input type="checkbox"/> International Mechanical Code |
| <input type="checkbox"/> ICC ANSI A117.1 Accessibility Code | <input type="checkbox"/> International Fuel Gas Code |
| <input type="checkbox"/> International Existing Building Code | <input type="checkbox"/> NFPA 54 National Fuel Gas Code |
| <input type="checkbox"/> International Residential Code | <input type="checkbox"/> NFPA 58 Liquefied Petroleum Gas Code |
| <input checked="" type="checkbox"/> International Fire Code | <input type="checkbox"/> Wildland Urban Interface Code |
| <input type="checkbox"/> Uniform Plumbing Code | |

For the Washington State Energy Code, please see specialized [energy code forms](#)

Section(s): 1107, 1107.1, 1107.1.1, 1107.1.2

Title: Lithium-ion technology energy storage systems, Early detection, Corrective action plan

2. Proponent Name (Specific local government, organization or individual):

Proponent: Ken Brouillette

Title: Technical Code Coordinator

Date:9/6/2024

3. Designated Contact Person:

Name: Ken Brouillette

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4. Proposed Code Amendment. Reproduce the section to be amended by underlining all added language, striking through all deleted language. Insert new sections in the appropriate place in the code in order to continue the established numbering system of the code. If more than one section is proposed for amendment or more than one page is needed for reproducing the affected section of the code, additional pages may be attached.

Clearly state if the proposal modifies an existing amendment or if a new amendment is needed. If the proposal modifies an **existing amendment**, show the modifications to the existing amendment by underlining all added language and striking through all deleted language. If a new amendment is needed, show the modifications to the **model code** by underlining all added language and striking through all deleted language.

Code(s) 2024 IFC Section(s) 1107, 1107.1, 1107.1.1,
1107.1.2

Enforceable code language must be used.
Amend section to read as follows:

SECTION 1107

ENERGY STORAGE SYSTEMS

~~1107.1~~ **1207.12 Pre-existing Lithium-ion technology energy storage systems.** The owner of an energy storage system (ESS) utilizing lithium-ion battery technology having capacities exceeding the values in Table 1207.1.3 and that are not listed to UL 9540 installed prior to the jurisdiction's adoption of the 2018 or later edition of the *International Fire Code* shall provide the *fire code official* a ~~failure modes and effects analysis (FMEA) or other approved hazard mitigation analysis~~ technical report in accordance with Section 104.2.2 for review and approval.

Exception: Detached one- and two-family dwellings and townhouses.

~~1107.1.1~~ **1207.12.1 Early detection.** In addition to ~~the requirements of Sections 1207.1.8.1 and 1207.1.8.2~~ identifying potential failure events, the ~~analysis~~ technical report shall include an assessment of the ability of the installed protection systems to provide for early detection and notification ~~of a thermal runaway event in relation to the ability of~~ to emergency responders ~~to safely mitigate the size and impact of a thermal runaway event.~~

~~1107.1.2~~ **1207.12.2 Corrective action plan.** Where hazards are identified by the ~~analysis~~ technical report, a plan that includes a timetable for corrective action shall be submitted to the *fire code official* for review and approval. The plan shall include actions and system improvements necessary for eliminating or mitigating any identified hazards, including listed methods for early detection and notification of a thermal runaway event.

5. Briefly explain your proposed amendment, including the purpose, benefits and problems addressed.

The main purpose of this proposal is to move the language from Chapter 11 over to Section 1207. The issue is not a building feature retrofit topic, it is one of ongoing operation and maintenance of energy storage systems which requires an operational permit from the fire code official. As an operational issue the language belongs in Section 1207 for application to the existing systems before operational permits are issued or renewed.

In Section 1207.12 The use of the IFC edition date has been eliminated and replaced with the lack of a UL 9540 listing as the more accurate trigger relative to system safety. The language referring to an FMEA or other approved HMA has been replaced with “Technical Report, with what is to be covered by the technical report provided in the following subsections.

In Section 1207.12.1 The reference to Sections 1207.1.6.1 and 1207.1.6.2 have been deleted to eliminate a conflict, both sections are geared to assessing new installations and Section 1207.1.6.1 could lead one to believe if none of those listed items apply, they are done. Replacing the language with “identifying potential failure events” provides clearer instruction within the section itself. The language referring to the emergency responders' abilities has been removed as subjective and unpredictable in many cases. The intent of the requirements is to assess potential hazards and take action to correct the hazards preventing an event.

In Section 1207.12.2, changed the wording of analysis to technical report for consistency with proposal.

6. **Specify what criteria this proposal meets.** You may select more than one.

- The amendment is needed to address a critical life/safety need.
- The amendment clarifies the intent or application of the code.
- The amendment is needed to address a specific state policy or statute.
- The amendment is needed for consistency with state or federal regulations.
- The amendment is needed to address a unique character of the state.
- The amendment corrects errors and omissions.

7. **Is there an economic impact:** Yes No

If no, state reason: The change proposed is to move an existing requirement addressing operational activities subject to an annual permit from Chapter 11 to Section 1207 for ESS. . The additional changes made clarifies the language and eliminated a conflict. The end result of application has not changed.

If yes, provide economic impact, costs and benefits as noted below in items a – f.

- a. **Life Cycle Cost.** Use the OFM Life Cycle Cost [Analysis tool](#) to estimate the life cycle cost of the proposal using one or more typical examples. Reference these [Instructions](#); use these [Inputs](#). Webinars on the tool can be found [Here](#) and [Here](#)). If the tool is used, submit a copy of the excel file with your proposal submission. If preferred, you may submit an alternate life cycle cost analysis.
- b. **Construction Cost.** Provide your best estimate of the construction cost (or cost savings) of your code change proposal.

Click here to enter text./square foot

(For residential projects, also provide Click here to enter text./ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

- c. **Code Enforcement.** List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:
- d. **Small Business Impact.** Describe economic impacts to small businesses:
- e. **Housing Affordability.** Describe economic impacts on housing affordability:

- f. ***Other.*** Describe other qualitative cost and benefits to owners, to occupants, to the public, to the environment, and to other stakeholders that have not yet been discussed:

Please send your completed proposal to: sbcc@des.wa.gov

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.