

ESS/ PV Permitting Process at Properties of R-3/ R-4 Occupancies
LACoFD Inspection Checklist

Insp. DATE	DATE Req'st Rcvd	# TIMES INSPECTED	PROJECT ADDRESS &/OR IDENTIFIER						
I.) PV/ ESS PERMITTING PROCESS — GENERAL									
1.) INSPECTION REQUEST / SCHEDULING									
<p>a.) <u>Before Making Request for FD Inspection:</u> Applicant shall (#1) <u>Ensure Compliance with this Checklist</u> and (#2) <u>Have the Following Ready to Provide</u> to the Los Angeles County Fire Department (LACoFD):</p> <p>i.) <u>Address and Occupancy Classification of Project Site</u> (per the <i>Building- and Fire-Code</i> classification).</p> <p>ii.) <u>Digital Proof of Construction Permit obtained from</u> the jurisdictional Building and Safety Department, including any inspection checklist provided therewith.</p> <p>iii.) <u>LACoFD ESS/PV Installation Declaration Document for R-3/ R-4</u>, completed, & installation photo(s).</p> <p>iv.) <u>Invoicing Information for Fire-Department for Fire Prevention Division Inspection Services:</u></p> <table style="width: 100%; border: none;"><tr><td style="width: 50%;">(1) Contractor Name</td><td style="width: 50%;">(4) Full Name (to which the bill is to be addressed)</td></tr><tr><td>(2) Contractor License Number</td><td>(5) Street Address, City, State, and Zip Code</td></tr><tr><td>(3) Contractor Telephone Number</td><td>(6) Email Address (for billing purposes)</td></tr></table> <p>b.) <u>Applicant shall Obtain jurisdictional FD Office Contact Information for the Project in Question:</u> Refer to the <i>LACoFD Fire Prevention Regional Inspection Office Phone List</i>. Select the nearest office to the project site.</p> <p>c.) <u>Applicant shall Contact the appropriate/jurisdictional Regional- or Specialty-Unit office:</u></p> <p>i.) <u>Call</u> the jurisdictional inspection office; <u>provide</u> the project address, occupancy classification, and project description <u>to confirm it is the appropriate office location for the project;</u> and <u>confirm email address.</u></p> <p>ii.) <u>Schedule</u> the inspection.</p> <p>iii.) <u>Email all the Information in Item 1.)a.), above, directly to the office/inspector assigned.</u> <u>Email Subject: "PV/ESS Inspection Request: [Insert Project Address]"</u></p> <p>iv.) <u>Pay the invoice.</u> Invoices unpaid at the time of the inspection will result in a cancellation of inspection. The inspection will need to be rescheduled and payment received prior to inspection.</p>				(1) Contractor Name	(4) Full Name (to which the bill is to be addressed)	(2) Contractor License Number	(5) Street Address, City, State, and Zip Code	(3) Contractor Telephone Number	(6) Email Address (for billing purposes)
(1) Contractor Name	(4) Full Name (to which the bill is to be addressed)								
(2) Contractor License Number	(5) Street Address, City, State, and Zip Code								
(3) Contractor Telephone Number	(6) Email Address (for billing purposes)								
2.) GENERAL ADVISORY									
<p>a.) <u>Installations shall comply with the 2023 edition of the Los Angeles County Fire Code</u> ("LACFC", a locally amended version of the 2022 California Fire Code). The local Los Angeles County (LAC) amendments/additions to the 2022 California Fire Code (CFC) can be viewed at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT32FICO The section numbering of the LAC amendments/additions matches the organization/numbering of the 2022 CFC. Links to amendments of certain subsections of Section 1207.11 (ESS in Group R-3 and R-4 occupancies) are provided in this checklist in blue text, for the user's convenience.</p> <p>b.) <u>ESS (energy storage systems) Installations requiring LACoFD inspection:</u></p> <p>i.) ESS installations with a capacity* of more than 3 kWh (2023 LACFC Section 1207.11). * <u>"Energy capacity is the total energy capable of being stored (nameplate rating [i.e., the nominal rating]), not the usable energy rating"</u> (CFC/LACFC Table 1207.1.1, footnote "a").</p> <p>ii.) Electrical-disconnection devices, and associated placarding. See Section IV.) of this document.</p> <p>c.) <u>PV (solar photovoltaic) Installations — Aspects requiring LACoFD inspection:</u></p> <p>i.) Electrical-disconnection devices, and associated placarding. See Section IV.) of this document.</p> <p>ii.) Rapid-Shutdown attenuation devices, and associated placarding. See Section IV.) of this document.</p> <p>iii.) <u>Building-Integrated PV (BIPV) system panel arrays that meet both of the following two criteria:</u></p> <p>(a) The location of the electrified components of the BIPV system that are above the roof sheathing cannot be visibly and readily determined by the untrained occupant; and</p> <p>(b) A door, window, or emergency escape and rescue opening serving habitable or occupiable space, or a bathroom, exists both above the roof plane and set back from the eave of the roof such that an occupant making egress or being rescued through that opening would need to cross the roof plane onto which the BIPV is to be installed.</p> <p>iv.) LACoFD retains the right to inspect other portions of the PV system subject to laws, codes, and regulations under the authority of the Fire Department.</p>									

NOTICE: This checklist is an aid; it is not a substitute for, nor does it supercede, the applicable codes.

**ESS/ PV Permitting Process at Properties of R-3/ R-4 Occupancies
LACoFD Inspection Checklist**

Insp. DATE	DATE Req'st Rcvd	# TIMES INSPECTED	PROJECT ADDRESS &/OR IDENTIFIER																										
INSPECTION			II.) ESS REQUIREMENTS — GENERAL																										
<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Y</td><td>N</td><td>N/A</td></tr> <tr><td>Y</td><td>N</td><td>N/A</td></tr> <tr><td>Y</td><td>N</td><td>N/A</td></tr> <tr><td>Y</td><td>N</td><td>N/A</td></tr> <tr><td>Y</td><td>N</td><td>N/A</td></tr> <tr><td>Y</td><td>N</td><td>N/A</td></tr> </table>			Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	<p>1.) CUT/SPECIFICATION SHEETS for the following shall be immediately available upon <i>request</i> of the fire code official.</p> <p>a.) <u>ESS Unit Model(s)*</u> * Full ESS installation manual shall be provided if requested by fire code official.</p> <p>i.) Confirm proposed location(s) & mounting is allowed by manufacturer.</p> <p>ii.) Confirm UL 9540 listing (all individual components, or as an entire unit) (CFC/LACFC §1207.11.1). ESS listed and labeled solely for utility or commercial use shall not be used for residential applications.</p> <p>b.) <u>ESS Inverter(s)</u> i.) Confirm UL 1741 listing, <u>or</u> the inverter listing may be provided as <i>part of</i> the UL 9540 listing (i.e., in that case no UL 1741 listing would be necessary) (CFC/LACFC §1207.11.5).</p> <p>c.) Alarm/detector and notification devices, for/where ESS is installed in an attached garage. See Section III.)3.) of this document.</p> <p>d.) <u>Impact protection</u>, where ESS is subject to vehicular impact. See Section III.)2.) of this document.</p>								
Y	N	N/A																											
Y	N	N/A																											
Y	N	N/A																											
Y	N	N/A																											
Y	N	N/A																											
Y	N	N/A																											
<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Y</td><td>N</td><td></td></tr> </table>			Y	N		<p>2.) ENERGY CAPACITY/RATING* — PER INDIVIDUAL ESS UNIT</p> <p>a.) Individual energy storage system units shall have a maximum rating* of 20 kWh. * "Energy capacity is the total energy capable of being stored (nameplate rating [i.e., the <i>nominal rating</i>]), not the usable energy rating" (CFC/LACFC Table 1207.1.1, footnote "a").</p>																							
Y	N																												
<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Y</td><td>N</td><td></td></tr> <tr><td>Y</td><td>N</td><td></td></tr> </table>			Y	N		Y	N		<p>3.) ENERGY CAPACITY/RATING^a — AGGREGATES^{***}:</p> <p>a.) Aggregate^{***} PER SITE: 240 kWh maximum (≤160kWh outdoors + ≤80kWh in garages)</p> <p>b.) Aggregate^{***} PER LOCATION ON THE SITE: See Table↓</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Compliance Worksheet/Table:</th> </tr> <tr> <th colspan="2">AGGREGATE AMOUNTS^{a,**,}</th> <th colspan="2">LOCATION^b (LACFC §1207.11.3–1207.11.4)</th> </tr> </thead> <tbody> <tr> <td>NA/0</td> <td>Actual aggregate</td> <td><80kWh?</td> <td>Inside attached garages^c: A max of 80 kWh may be located in sum total of all indoor locations.</td> </tr> <tr> <td>NA/0</td> <td>Actual aggregate</td> <td><160kWh?</td> <td>Outdoors^d on outer side of exterior building walls: A maximum of 160 kWh may be located in sum total of all exterior locations.</td> </tr> <tr> <td>NA/0</td> <td>Actual aggregate</td> <td><160kWh?</td> <td>Outdoors^d on the ground:</td> </tr> </tbody> </table> <p>Special Explanation/Notes^e:</p> <p>* If any preexisting ESS is to be retained: They are to be included in the aggregate kWh computations per site, and per location, both above.</p> <p>** Include any standalone vehicle battery (i.e., one not located in a <i>viable</i> vehicle) <i>that is used to power a structure</i>.</p> <p>a. "Energy capacity is the total energy <i>capable of being stored</i> (nameplate rating [i.e., the <i>nominal rating</i>]), not the usable energy rating" (CFC/LACFC Table 1207.1.1, footnote "a").</p> <p>b. The LACFC does not allow ESS installation within: dwelling units (meaning anywhere inside the envelope of a dwelling unit, or accessory dwelling unit), sleeping units, spaces opening directly into sleeping rooms or units, closets, bathrooms, basements, accessory structures that are not garages, nor vaults; unless by AMMR. Any such AMMR shall confirm (among other considerations) that the gas chromatography from the UL 9540A tests establishes that the ESS would not generally be capable of generating enough flammable gas such that the air of the compartment (into which the ESS is being proposed to be installed) would reach 25% LFL. This is a national and State requirement (reference UL 9540A, 2020). Any AMMR would also need to confirm (at the least) compliance with requirements for fire detection (LACFC §1207.11.6) and possibly ventilation (2022 CEC §706.20(A)).</p> <p>c. ESS installed inside attached garages shall be subject to Section III.)3.) of this document.</p> <p>d. ESS installed outdoors, including those on the outer side of exterior building walls, shall be subject to Section III.)1.)b.) (next page).</p> <p>e. Use this section, if desired, to explain pre-existing ESS, ESS in multiple locations of the same category on the same site, or other special scenarios requiring special review, such as multiple groups of exterior mounted ESS, ESS in/on multiple accessory structures, or ESS of much different chemistries/hazards.</p>	Compliance Worksheet/Table:				AGGREGATE AMOUNTS ^{a,**,}		LOCATION ^b (LACFC §1207.11.3–1207.11.4)		NA/0	Actual aggregate	<80kWh?	Inside attached garages^c : A max of 80 kWh may be located in sum total of all indoor locations.	NA/0	Actual aggregate	<160kWh?	Outdoors ^d on outer side of exterior building walls : A maximum of 160 kWh may be located in sum total of all exterior locations.	NA/0	Actual aggregate	<160kWh?	Outdoors ^d on the ground :
Y	N																												
Y	N																												
Compliance Worksheet/Table:																													
AGGREGATE AMOUNTS ^{a,**,}		LOCATION ^b (LACFC §1207.11.3–1207.11.4)																											
NA/0	Actual aggregate	<80kWh?	Inside attached garages^c : A max of 80 kWh may be located in sum total of all indoor locations.																										
NA/0	Actual aggregate	<160kWh?	Outdoors ^d on outer side of exterior building walls : A maximum of 160 kWh may be located in sum total of all exterior locations.																										
NA/0	Actual aggregate	<160kWh?	Outdoors ^d on the ground :																										
<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Y</td><td>N</td><td></td></tr> <tr><td>Y</td><td>N</td><td></td></tr> <tr><td>Y</td><td>N</td><td></td></tr> <tr><td>Y</td><td>N</td><td></td></tr> <tr><td>Y</td><td>N</td><td></td></tr> </table>			Y	N		Y	N		Y	N		Y	N		Y	N													
Y	N																												
Y	N																												
Y	N																												
Y	N																												
Y	N																												
<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>N/A</td><td colspan="2">if No ESS</td></tr> </table>			N/A	if No ESS																									
N/A	if No ESS																												

NOTICE: This checklist is an aid; it is not a substitute for, nor does it supercede, the applicable codes.

ESS/ PV Permitting Process at Properties of R-3/ R-4 Occupancies
LACoFD Inspection Checklist

Insp. DATE	DATE Req'st Rcvd	# TIMES INSPECTED	PROJECT ADDRESS &/OR IDENTIFIER
INSPECTION			
III.) ESS INSTALLATION REQUIREMENTS			
1.) SPACING & SEPARATION DISTANCES: (2023 LACFC §1207.11.2.1, §1207.11.3.1)			
Y	N	NA	<p>a.) Between Individual ESS Units or Groupings:</p> <p>i.) <u>Individual ESS units or groupings</u> (where no single unit nor single grouping exceeds 20 kWh) shall be separated from one another by 3 feet (LACFC §1207.11.2.1).</p> <p>ii.) <u>Groupings shall be in accordance with the LACoFD ESS & PV Requirement Guide, Part A – Spacing</u> (pgs 2 & 3 of 14), and APPENDIX D – SPACING/ GROUPING.</p> <p>b.) Between Units & Building/Property Features: Where an ESS is installed on the outer side of an exterior building wall, or outdoors on a wall or the ground (LACFC §1207.11.3.1):</p> <p>i.) ESS units shall be installed and maintained a minimum of 3 feet (in any direction) from all doors, windows, operable openings, HVAC inlets and other penetrations directly or indirectly into habitable or occupiable spaces, or bathrooms. Refer to Vents/Openings APPENDIX C of LACoFD ESS & PV Requirement Guide.</p> <p>ii.) ESS units shall be installed and maintained a minimum of 5 feet from all of the following: Lot lines, Public ways, Other buildings, Stored combustible materials, Hazardous materials.</p> <p>iii.) ESS units shall be installed and maintained a minimum of 10 feet from <u>vegetation</u>. Single specimens of trees, shrubbery or cultivated ground cover such as green grass, ivy, succulents or similar plants used as ground cover shall be permitted to be exempt provided that they do not form a means of readily transmitting fire (LACFC §1207.5.7).</p>
Y	N	NA	
Y	N		
Y	N	NA if No ESS Outside	
Y	N		
Y	N		
Y	N		
2.) DETECTION & NOTIFICATION:			
<p>ESS installed <u>within an attached garage</u> shall be protected by one*** of the three following options in accordance with LACoFD Requirement Guide, APPENDIX E (2023 LACFC §1207.11.6):</p> <p>In all cases, see LACoFD Requirement Guide, APPENDIX E – DETECTION AND NOTIFICATION. Not eligible for Fire Fast-Track Process due to the complexity of fire-detection options; Submit Plans.</p> <p>* Notification, in all three options (a, b, and c, below), shall be provided in locations within the dwelling units and/or sleeping units, as well as in the attached garage.</p> <p>** Detection device shall be listed for the environment in which it is being installed.</p> <p>a.) An approved [self-contained] heat detector.</p> <p>b.) An approved heat detector that is a component of a fire alarm system in the residence that will activate a notification device that will alert the residents of an emergency.</p> <p>c.) A fire sprinkler, properly spaced and integrated to a residential fire sprinkler system outfitted with a flow detector that activates a notification device that will alert the residents of an emergency.</p>			
Y	N	NA if no ESS in an Attached Garage	
Y	N		
Y	N	NA	
Y	N	NA	
Y	N	NA	
3.) IMPACT PROTECTION:			
<p>a.) <u>Where Required*</u>: Where subject to vehicular impact per <u>LACFC §1207.11.7</u> (links below).</p> <p>Exceptions:</p> <p>i.) Impact protection is not required for an ESS unit where no portion of the ESS unit is less than <u>36 inches</u> (914 mm) above the finished floor, unless determined necessary per Section 1207.11.7.3 (see Exception ii.), below).</p> <p>ii.) Where determined necessary by the fire code official due to <u>special circumstances</u>, impact protection shall be provided (LACFC §1207.11.7.3).</p> <p>b.) <u>Impact-Protection Design and Positioning**</u> — See the following:</p> <p>i.) LACFC Section 1207.11.4. (See the next page of this checklist)</p> <p>ii.) Impact Protection APPENDIX A of the LACoFD ESS & PV Requirement Guide.</p>			
COMPLIANCE WORKSHEET			
Y		N	
Note if Satisfactory or Insufficient:		Rationale if insufficient:	

NOTICE: This checklist is an aid; it is not a substitute for, nor does it supercede, the applicable codes.

ESS/ PV Permitting Process at Properties of R-3/ R-4 Occupancies

LACoFD Inspection Checklist

Insp. DATE | DATE Req'd Rcvd | # TIMES INSPECTED | PROJECT ADDRESS &/OR IDENTIFIER

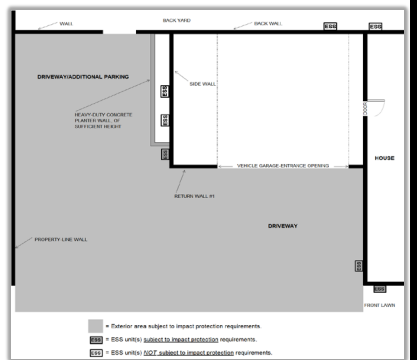
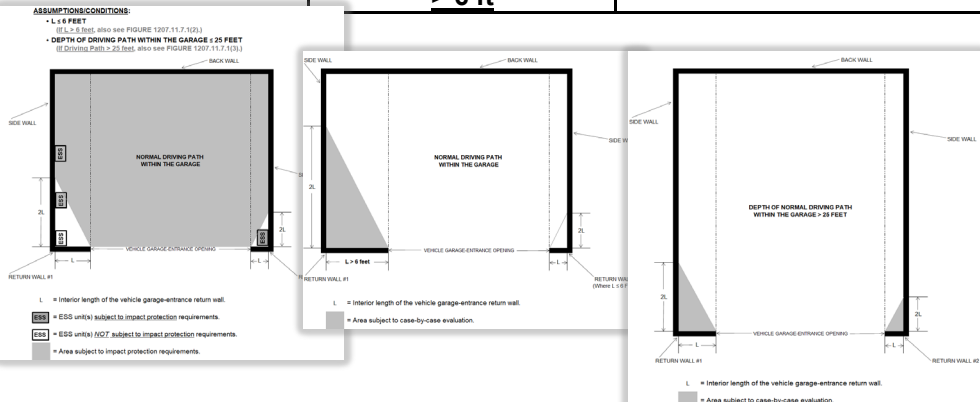
*SCENARIO-BASED FIGURES for determining when impact protection is required, for reference (LACFC §1207.11.7):

(Links are provided below to select sections and to the full-size figures within LACFC §1207.11.7)

INTERIOR-INSTALLED ESS (LACFC §1207.11.7.1)

EXTERIOR-INSTALLED ESS (LACFC §1207.11.7.2)

Driving Path ≤ 25 ft & Return Wall (L) ≤ 6 ft **Additional Criteria, Where Return Wall (L) > 6 ft** **Additional Criteria, Where Driving Path > 25 ft**

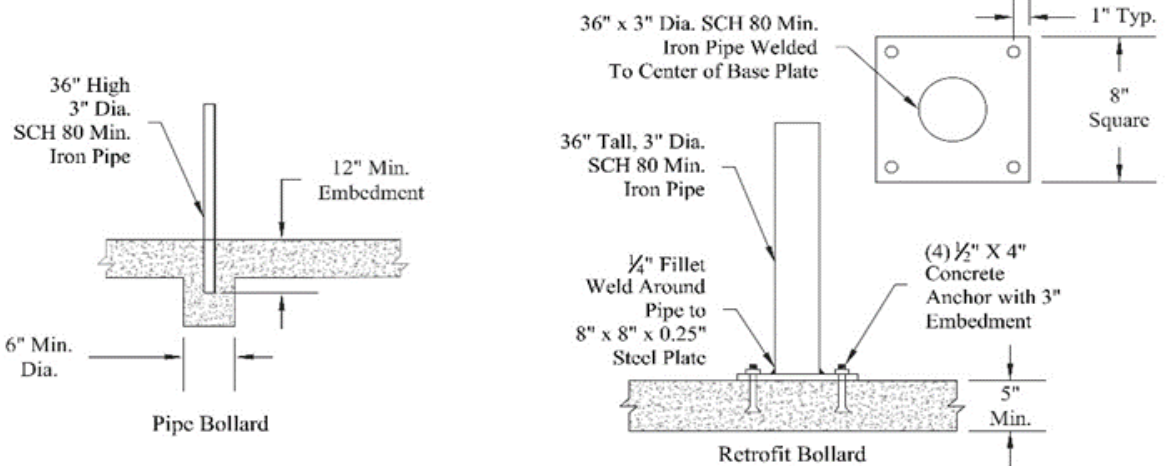


**DESIGN OF IMPACT PROTECTION, for reference (LACFC §1207.11.7.4 – 1207.11.7.4.2):

a.) **Type** shall be of the following 2 options, *unless* provided by other *approved* structures (e.g., concrete wall).

i.) **Pipe-bollard type (LACFC §1207.11.7.4.1):**
 Shall be 48 inches (1219 mm) in length, by 3 inches (76 mm) in diameter, schedule 80 steel pipe, embedded in a concrete pier 12 inches (304 mm) deep and 6 inches (152 mm) in diameter with 36 inches (914 mm) of pipe exposed, filled with concrete.

ii.) **Retrofit-bollard type (LACFC § 1207.11.7.4.2):**
 Shall be 36 inches (914 mm) in height, by 3 inches (76 mm) in diameter, schedule 80 steel pipe fully welded to an 8-inch-square (203 mm) by ¼-inch-thick (6.4 mm) steel plate and bolted to a concrete floor by means of four ½-inch (12.5 mm) by 4-inch (101 mm) steel anchor bolts. The anchor bolts shall be suitable for use in concrete and shall obtain a minimum of 3-inch (76 mm) nominal embedment per the manufacturer's installation instructions.



b.) **Spacing between bollards** shall not exceed 4 feet (1219 mm) on center and be no closer than 6 inches (152 mm) from an ESS unit. Bollards shall not encroach upon the working clearances required by Sections 1207.11.5.1 and 603 (i.e., Section IV.)3.) of this document).

i.) **Positioning and the need for multiple bollards** for an ESS unit or a series of ESS units shall be determined by the fire code official, and shall:

Be guided by the **Impact Protection APPENDIX A** of the **LACoFD ESS & PV Requirement Guide**.

ESS/ PV Permitting Process at Properties of R-3/ R-4 Occupancies
LACoFD Inspection Checklist

Insp. DATE	DATE Req'd Rcvd	# TIMES INSPECTED	PROJECT ADDRESS &/OR IDENTIFIER
IV.) ELECTRICAL DISCONNECTS, PLACARDING, & WORKING CLEARANCES			
1.) DISCONNECT/CONTROL EQUIPMENT LOCATIONS:			
Y	N	<p>Electrical disconnection means and Rapid Shutdown activation devices for <u>all power sources</u> (whether producing or storing) <u>serving a structure shall be located:</u> on the exterior, within <u>6 feet (1829 mm) of the main service panel, on the same wall plane, and maintained not separated from one another by walls, gates, fences, vegetation, or architectural features of the building</u> (2023 LACFC §509.3). Where additional and/or remote means are necessary in order to accomplish this requirement, physical disconnection shall be achieved at the source of the hazard itself, such as by use of relay(s).</p> <p>Exception: The fire code official shall have the authority to allow case-by-case exceptions where site or hazard constraints make a requirement impractical. Where such exceptions are granted, clear, permanent signage shall be provided in all cases. The color, content, number, and medium of the signage shall be as determined by the fire code official.</p>	
Y	N	NA	
2.) LACoFD ELECTRICAL POWER SOURCE DISCONNECT PLACARDING SYSTEM* (2023 LACFC §509.1.1, §1207.11.5.1; 2022 CEC §225.37, §230.70, §230.85, §705.10, §705.20):			
<p>Shall account for <u>all power sources capable of supplying electricity to a structure's electrical circuit(s)</u> (e.g., utility, generator, PV, ESS, wind, fuel-cell, vehicle-to-grid inputs). A pre-wired optional auxiliary power source <i>input</i> shall also constitute a wired capability to be served by more than one power source, and therefore shall require a placarded disconnect in accordance with this placarding system.</p> <p>* See <u>Disconnect Placarding APPENDIX B</u> of the <u>LACoFD ESS & PV Requirement Guide</u>.</p> <p>a.) Placard size and material.</p> <p>b.) Color.</p> <p>c.) Character type.</p> <p>d.) Verbiage and word arrangement.</p> <p>e.) Attachment means.</p> <p>f.) Placement locations.</p> <p>g.) PV Rapid Shutdown function activation (where present) is encompassed.</p>			
Y	N		
Y	N		
Y	N		
Y	N		
Y	N		
Y	N		
Y	N		
3.) WORKING CLEARANCES:			
Y	N	<p>The minimum required working space shall be not less than <u>30* inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height</u> in front of electrical service equipment** (2023 LACFC §603.4). Storage of materials shall not be located within the designated working space (2023 LACFC §603.4).</p> <p>* Where the electrical service equipment is wider than 30 inches (762 mm), the minimum working space shall be not less than the width of the equipment.</p> <p>** For the purposes of 2023 LACFC Sections 509 and 603, both an energy storage system (ESS) and a photovoltaic (PV) system shall each be considered an electrical power source, with electrical service equipment, and an electrical hazard (2023 LACFC §509.1.1, §603.4.1).</p>	
Y	N		
Y	N		
Y	N	NA	
V.) REQUIREMENTS FOR SITE INSPECTION			
1.) Required Prior to Inspection:			
Y	N	<p>a.) Digital Proof of Construction Permit obtained from the jurisdictional Building and Safety Department, including any inspection checklist provided to the applicant with the permit.</p>	
Y	N	<p>b.) LACoFD ESS/PV Installation Declaration Document for R-3/ R-4, completed, & install'n photo(s).</p>	
Y	N	<p>c.) Disconnect Placarding in Place: Per the LACoFD Electrical Power Source Disconnect Placarding System.</p>	
Y	N	<p>d.) Fee(s) Paid: LACoFD Fire Prevention fee(s) paid.</p>	
INSPECTION DATE(S) & RESULTS:		NOTE: A Passed Inspection Serves as an Operational Permit at a R-3/R-4 Occupancy, on the condition that it passes other necessary requirements from other agencies having jurisdiction (e.g., B&S, Utility, etc.).	

NOTICE: This checklist is an aid; it is not a substitute for, nor does it supercede, the applicable codes.