HCAI

Facilities Development Division

BACKUP POWER SOURCE for Temperature Control, Life-Saving Equipment and Oxygen Generating Devices

A6

FOR SKILLED NURSING FACILITIES

[OSHPD 2] Buildings

Advisory Guide Series

February 1, 2023

INTRODUCTION

The California Department of Health Care Access and Information (HCAI) – Office of Statewide Hospital Planning and Development (OSHPD) has prepared this *Advisory Guide* to address frequently asked questions to HCAI and the California Department of Public Health (CDPH) as they relate to Skilled Nursing Facilities, or OSHPD 2 Buildings, and Assembly Bill 2511 (AB 2511) requirements for alternative source of power to maintain a safe temperature for residents, maintain availability of life-saving equipment, and maintain availability of oxygen-generating devices.

Department of Health Care Access and Information (HCAI)
has drafted this Advisory Guide in consultation with the California Department of Public Health (CDPH)

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I. EXECUTIVE SUMMARY

AB 2511 requires Skilled Nursing Facilities (SNFs) to provide backup electric power to support the following loads Health and Safety Code §1418.22 (HSC §1418.22):

- Equipment required to maintain safe temperature for residents
- Life-saving equipment
- Oxygen-generating devices.

Additionally, the bill requires that the alternate power source(s) used to back up these loads be provided along with sufficient fuel onsite to maintain power production for no less than 96 hours (or make arrangements for fuel delivery) during an emergency event. The bill stipulates that the alternate power source must operate during power outages that may result from a public safety power shutoff, an emergency, a natural disaster, or other cause.

As written, the bill went into effect on January 1, 2023 and requires that all SNFs comply with the stated requirements by January 1, 2024.

Prior to the passing of this law, there were no code requirements for cooling equipment to be fed by emergency power. In previous codes the terms life-saving equipment and oxygen generating devices were not identified and therefore not specifically required to be fed by emergency power. In order to meet the new law's requirements, these systems will need to all be fed by an alternate source of power. HCAI Policy Intent Notice (PIN) 74- Skilled Nursing Facility Alternate Source of Power has developed a 2-step process for owners to systematically identify the cooling equipment, life-saving equipment and oxygen generating devices at their facilities, and to first answer the question as to whether these systems will continue to operate in the event of a utility power outage. If the answer is no the second step would be to submit a standard construction project to modify the existing electrical distribution system to bring the facility in compliance with HSC §1418.22. In addition to the new loads required to be backed up by alternate power, the law now requires operations of these loads for 96 hrs. Previous requirements to maintain emergency loads was 6 hrs. As PIN 74 clarifies the new loads identified by HSC §1418.22 are not emergency loads required by the California Electrical Code (CEC), but in addition to the emergency loads required by code to have emergency power backup. This advisory guide has been prepared to help explain the requirements of HSC §1418.22, which have been codified in PIN 74, and to act as a guide to help facilities ensure that they are in conformance with the law.

II. HEALTH AND SAFETY SECTION 1418.22 REQUIREMENTS

HSC §1418.22 reads as follows:

> *(a) The Legislature finds and declares that it is the public policy of this state to ensure the health and safety of highly vulnerable persons residing in skilled nursing facilities during power outages that may result from a public safety power shutoff, an emergency, a natural disaster, or other cause.*

(b) (1) A skilled nursing facility shall have an alternative source of power to protect resident health and safety for no fewer than 96 hours during any type of power outage.

(2) For purposes of this section, "alternative source of power" means a source of electricity that is not received through an electric utility, but is generated or stored onsite, which may include but is not limited to emergency generators using fuel, large capacity batteries, and renewable electrical generation facilities.

(c) For purposes of this section, "resident health and safety" includes, but is not limited to, maintaining a safe temperature for residents, maintaining availability of life-saving equipment, and maintaining availability of oxygen-generating devices.

(d) Facilities that use a generator as their alternative source of power shall maintain sufficient fuel onsite to maintain generator operation for no less than 96 hours or make arrangements for fuel delivery for an emergency event. If fuel is to be delivered during an emergency event, the facility shall ensure that fuel will be available with no delays.

(e) Facilities that use batteries or a combination of batteries in tandem with a renewable electrical generation facility as their alternative source of power, shall have sufficient storage or generation capacity to maintain operation for no fewer than 96 hours. Facilities shall also make arrangements for delivery of a generator and fuel in the event power is not restored within 96 hours and the generation capacity of the renewable electrical generation facility is unable provide sufficient power to comply with state requirements for long-term care facilities.

(f) A facility shall comply with the requirements of this section by January 1, 2024.

III. DEFINITIONS

The Health and Safety Code §1418.22 (HSC §1418.22) introduces a number of new terms and provides definitions to existing terms which slightly alter previous code definitions. The following definitions/clarifications are provided to help with the interpretations to this new law as they apply to PIN 74 and this advisory guide.

Alternate Power Source

A source of electricity that is not received through an electric utility, but is generated or stored onsite, which may include, but is not limited to generators using fuel, large capacity batteries, and renewable electrical generation facilities. Alternate power sources can be configured as the code required Emergency Power Supply (EPS) or can be separate from the EPS and designed to provide power to designated loads during the interruption of the normal electrical "utility" service, independent of the Emergency Power Supply system (EPSS).

Centers for Medicare and Medicaid Services (CMS)

The Centers for Medicare & Medicaid Services (CMS) is the agency within the U.S. Department of Health and Human Services (HHS) that administers the nation's major healthcare programs. The CMS oversees programs including Medicare and Medicaid.

Essential Electrical System

A system comprised of alternate sources of power and all connected distribution systems and ancillary equipment, designed to ensure continuity of electrical power to designated areas and functions of a health care facility during disruption of normal power sources, and also to minimize disruption within the internal wiring system.

Safe Temperature for Residents

"Safe temperature" under emergency conditions: Federal Code of Regulations, Title 42, §483.73(b)(1)(ii)(A), CMS emergency preparedness requirements, states, "alternate sources of energy to maintain - Temperatures to protect resident health and safety and for the safe and sanitary storage of provisions." Title 42, §483.10(i)(6) requires "comfortable and safe temperature levels. Facilities initially certified after October 1, 1990, must maintain a temperature range of 71 to 81° F."

Note: CMS requires facilities to establish procedures that determine how heating and cooling of their facility will be maintained during an emergency, including when there is a loss of the primary power source. It is noted that facilities are not required to heat and cool the entire building evenly but must ensure safe temperatures are maintained in areas deemed necessary to protect patients, other persons and for stored provisions. (This is to be determined by the facility risk assessment.)

Life-saving Equipment
Patient care equipment deemed essential to maintain life. Life-saving equipment may include but shall not be limited to ventilators, ATDs, crash carts with defibrillators, intravenous therapy equipment, feeding pumps, IV pumps, nebulizer machines, suction equipment, and medication dispensing machines.

Oxygen-generating Devices
Equipment that separates oxygen from compressed air using special selective adsorptive technology. Oxygen-generating devices may include but shall not be limited to concentrators and positive pressure apparatus as identified in Title 22, California Code of Regulations, Section 51511.

Special Seismic Certification
Special Seismic Certification, also referred to as Seismic Qualification, is a product approval for components like mechanical and electrical systems. Evaluation of the nonstructural components test their ability to withstand earthquakes and meet functional requirements following these events.

IV. BACKGROUND

HVAC SYSTEMS

For Skilled Nursing faculties, the typical HVAC system arrangement includes packaged air handling units with electrically powered refrigerant cooling, and gas burning systems for heating. The mechanical code has previously required equipment for heating and fans required for space pressurization to be fed by essential power, whereas cooling has not been required to be supplied by essential power.

Note: HVAC systems in hospitals were first identified as loads required to be fed by essential power in 1971 NEC.

LIFE-SAVING EQUIPMENT

The definition of life-saving equipment lists many pieces of equipment that typically are plugged into electrical receptacles. It is assumed that for sub-acute services within SNFs, there would be emergency (red) receptacles at patient beds that could be utilized to provide power to bedside life-saving equipment in the event of a utility outage. For standard SNFs, it is not clear if life-saving equipment is normally provided, and if it is, if these systems are backed up by emergency power.

OXYGEN-GENERATING DEVICES

The definition of oxygen-generating devices identifies (2) separate approaches; either a system with larger equipment and distribution throughout the building, or individual devices that typically are plugged into electrical receptacles. It is assumed that for sub-acute services within SNFs, that oxygen-generating devices would already be connected to emergency power. For standard SNFs, it is not clear if oxygen-generating devices will be present, and if they are provided that they are backed up by emergency power.

ESSENTIAL POWER SYSTEMS Licensed Skilled Nursing Facilities in California are required to meet California Title 24 requirements. This includes those requirements found in the California Electric Code (CEC). The 2022 California Electric Code Article 517.41 requires that two independent sources be provided for all essential loads in nursing homes and limited care facilities. A normal source generally supplying the entire electrical system and one or more alternate (essential) sources. The alternate (essential) source is required by current code and CMS to be a generator located on the premises.

CEC Article 517.42 requires that essential electrical systems for these facilities be divided into the following (2) branches:

1) Life Safety Branch – Configured so that all functions listed below shall be automatically restored to operation within 10 seconds after interruption of normal power.

- Illumination of the means of egress
- Lighting of the exit and directional signage
- Fire detection and alarm system
- Non-flammable medical gas system and vacuum systems alarms
- Hospital emergency communication systems
- Sufficient lighting in dining and recreation areas to provide illumination to exit ways
- Task lighting, battery charger, and selected receptacles in generator set location
- Elevator control, communication, and lighting

2) Equipment Branch – Configured so that all functions listed below shall be automatically restored to operation at appropriate time-lag intervals following the restoration of the life safety branch to operation.

   - Task illumination and selected receptacles in the following:
     - Patient care spaces
     - Medication preparation spaces
     - Pharmacy dispensing areas
     - Nurses' stations
   - Supply, return, and exhaust ventilating systems for airborne infectious isolation rooms
   - Sump pumps
   - Smoke control and pressurization systems
   - Kitchen hood supply or exhaust systems

   In addition, the following equipment shall have either automatic or manual connection capabilities.

   - Heating equipment to provide heating for patient rooms
   - Elevators
   - Additional illumination, receptacles and equipment shall be permitted to be connected to the equipment branch.

The new requirements for equipment in SNFs requiring back-up by alternate power sources, namely:
- Equipment required to provide safe temperature for residents
- Life-saving equipment
- Oxygen-generating devices

are above and beyond previous code requirements. Based on historical data the majority of SNFs in our state, do have an alternate source (EPSs), typically generators that back-up heating loads, but these facilities do not generally provide an alternate source to provide back-up power for cooling equipment. It is also believed that only sub-acute SNFs would have life-saving equipment and oxygen-generating devices at their facilities and that these devices and equipment are typically backed up by the EPS.

While the new law does not specifically require that these systems be backed up by essential power, typically this is the only alternate power source at existing SNFs in the state of California. Since these loads were not required by be fed by essential power prior to the signing of the law, it is doubtful that the new equipment required to be fed by an alternate power source is currently fed by essential power and/or that capacity exists in the existing essential power sources at the majority of SNF's in the state of California.

Note: CMS provides minimum requirements that SNFs are required to meet to qualify as participants in their federal payouts for Medicare and Medicaid. One of the CMS requirements for reimbursements is that the emergency power source be a generator. Based on these requirements, it can be assumed that the majority of the existing SNF's in California meet current code and CMS requirements, but very few provide emergency power for any other loads then detailed above.

ONSITE FUEL STORAGE

2022 CEC Article 700.12 requires that onsite fuel supply for essential power systems be provided to operate the EPS for not less than 6 hours (full-demand operation) for Skilled Nursing Facilities (SNFs). While the calculated load and sizing requirements of fuel for emergency generators, generally results in facilities with onsite fuel storage sufficient for more than 6 hours operation, there are very few facilities that have intentionally provided more than the code minimum. Therefore, it appears that the majority of generators deployed at California SNFs do not have 96 hours of onsite fuel storage.

Note: Regardless of whether modifications are required to bring the facilities electrical distribution into compliance with the law, there is a new requirement for onsite fuel storage to allow the facilities to provide a safe environment for inhabitants for a period of 96 hours. We have identified three (3) possible scenarios on how this might be accomplished, but for all cases, the facilities essential loads, and these newly identified loads, will be required to have provisions to be backed up for 96 hrs. The law states that for facilities that use a generator, batteries, or a combination of batteries in tandem with a renewable electrical generation resource as their alternative source of power, that they shall store sufficient fuel onsite to maintain generator operation for no less than 96 hours or make arrangements for fuel delivery for an emergency event. If fuel is to be delivered during an emergency event, the facility shall ensure that fuel will be available with no delays. The option to arrange for delivery of additional fuel for an emergency event will need to be submitted to CDPH for final approval. Fuel delivery will need to be acknowledged to maintain continued operation for the 96-hour duration.

SPECIAL SEISMIC CERTIFICATION

Special Seismic Certification (SSC) is required for life-safety components, such as emergency and standby power systems per 2022 CBC Section 1705.14.3.1. SSC is required to ensure that resources utilized to provide alternate power for loads identified in this law will remain functional “during power outages that may result from a public safety power shutoff, an emergency, a natural disaster, or other cause.” Based on these requirements it would appear that existing generators and essential power systems are code compliant and there for have SSC their EPSS’s.

Note: SSC is required for generators, batteries, or a combination of batteries in tandem with a renewable electrical generation facility that are used as alternative source(s) of power. Please refer to PIN 55 for further details of SSC requirements.

V. ASSESSMENT

To show compliance with the new law’s requirements the following systems/devices will need to be surveyed:

HVAC Systems – To determine if the facilities can provide temperature ranges of 71 to 81° F with existing equipment installed. Next the survey will need to investigate if these temperatures can be maintained. HCAI will look for compliance with the same

standards as require by CMS, namely the facilities will need to show that they have established procedures that determine how heating and cooling of their facility will be maintained during an emergency (for 96 hours), including when there is a loss of the primary power source. It is noted that facilities are not required to heat and cool the entire building evenly but must ensure safe temperatures are maintained in areas deemed necessary to protect patients, other persons and for stored provisions. (This is to be determined by the facility risk assessment.)

Life-Saving Equipment - The initial facility assessment should clarify what life-saving equipment exists at each facility, if any. Existing life-saving equipment should be identified with an explanation/documentation of how this equipment can remain functional during a power outage for 96 hrs. If the existing system does not meet the requirements of HSC §1418.22 this should be stated along with the proposed remediation to bring the facility up to the requirements of this law.

Oxygen-Generating Devices - The initial facility assessment should clarify what oxygen-generating equipment exists at each facility, if any. Existing oxygen-generating equipment should be identified with an explanation/documentation of how this equipment can remain functional during a power outage for 96 hrs. If the existing system does not meet the requirements of HSC §1418.22 this should be stated along with the proposed remediation to bring the facility up to the requirements of this law

Though CDPH will regulate and inspect compliance with HSC §1418.22 , HCAI will review a facility's assessment for compliance with PIN 74 and review/comment on the proposed remediation of non-compliant facilities. HCAI has developed an assessment process to assist in determining compliance. Instructions for submission are presented in section VIII.

SNF Backup Power Assessment (SNFA) is the process implemented to allow a facility to submit an assessment application. The online application involves a series of questions regarding a facility's heating system(s), cooling systems(s), life-saving equipment, oxygen-generating devices, emergency generator(s), and alternate power source(s). The questions are intended to make visible the various systems that must be compliant with HSC §1418.22. Based on the client's answers to these questions, required documentation will be identified.

Once submitted through the HCAI eServices Portal online submission, HCAI will review submitted documentation and make a determination of the facility's compliance. When determined compliant, HCAI will send the assessment information to CDPH requesting concurrence with the determination. Historical data may be required to substantiate temperate climates that are being used for justification to not provide cooling loads on emergency power. If CDPH concurs, the assessment application will be closed with compliance. HCAI/OSHPD involvement with HSC 1418.22 is complete. CDPH will survey the facility and notify facility of the next steps for filing the form showing

compliance. If CDPH does not concur with the determination, a meeting with stakeholders will be held to find a resolution.

The assessment will need to include floor plans of the building to show area of coverage for heating and/or cooling systems and location of units. Rooms or areas will need to be labeled to indicate function of spaces to identify patient care areas. Where new work is needed to bring the facility into compliance, the documentation will need to indicate the proposed remediation scope of work to enable the facility to comply with the law.

Where the building or a portion of the building does not have cooling equipment, temperature data will need to be provided to demonstrate the building will not exceed the safe temperature requirement.

If HCAI determines the facility to be non-compliant with HSC §1418.22, the facility will be notified with the findings and remediation of the non-compliant systems will be necessary. See section VI next steps.

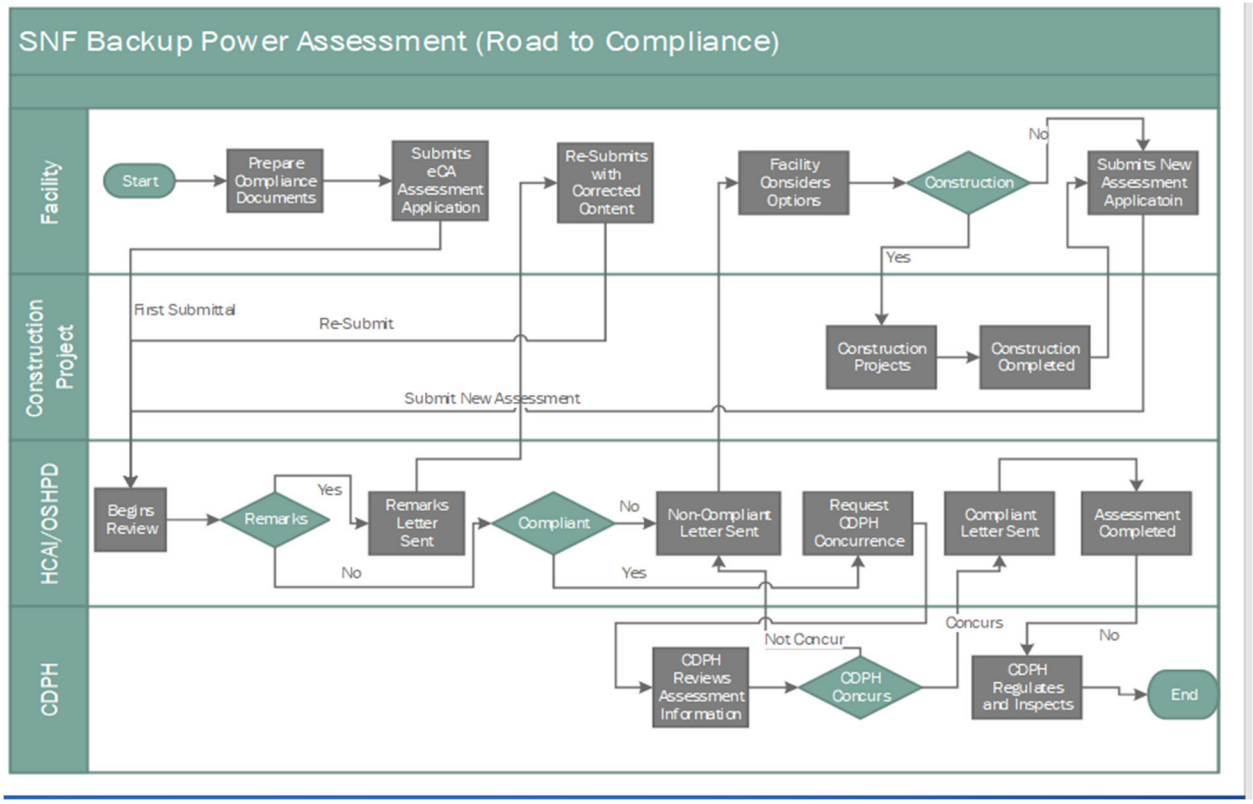


Figure 1 – SNF Backup Power Assessment Flow Chart

VI. WHEN NEW WORK IS REQUIRED

If a facility is determined to be non-compliant, the assessment application is closed without compliance. The assessment is not a construction project so remediation of non-compliant systems must be submitted to HCAI/OSHPD in the form of construction projects utilizing *Application for New Project* via the eServices Portal electronic project

tracking. Application for New Project user guide can be found here at New Project User Guide.

Once all construction projects for remediation are complete and closed, the facility will submit a new *SNF Backup Power Assessment* application with documentation to substantiate assertions of compliance by the facility. If determined to be compliant, the process as noted in section V will be completed.

If a facility is determined to be non-compliant after construction projects are closed. Additional construction projects will be needed to bring the facility into compliance with HSC §1418.22 and additional *SNF Backup Power Assessment* will be submitted until compliance is reached.

VII. CODE IMPLICATIONS

While HSC §1418.22 introduces new requirements for alternate power source(s) to support loads previously not required to be backed up, there are existing codes that provide requirements for new equipment and resources that might be utilized to meet these new requirements. Depending on what resources are used and how back-up power is provided there are a myriad of code requirements that might come into play. The following is a partial list:

	Microgrid White Paper Codes/Regulations - Applicable Codes Matrix	Microgrid Power Source					
		Solar (PV's)	Wind	Fuel Cells	Cogen	Energy Storage	UPS
	Codes/Requirements						
1	CARB - California Air Resources Board - Air Quality Requirements				x		
2	CPUC - California Public Utility Comission (Rule 21)	maybe	maybe	x	x	maybe	no
3	OSHPD CAN 2-0 Local Approval	x	x	x	x	maybe	no
4	2019 CBC - California Building Code	Only if in OSHPD building and/or serving as alternate source					
5	2019 CFC - California Fire Code						
5a	1206 Electrical Energy Storage Systems					x	x
5b	1206.2 Stationary Storage Battery Systems					x	x
5c	1204 Photo Voltaics	x				x	
5d	1205 Fuel Cell (NFPA 53 addopted by reference)			x			
6	2019 CEC - Califonial Electrical Code						
6a	517 Healthcare Facilities	Only if in OSHPD building and/or serving as alternate source					
6b	690 PV Systems	x				x	
6c	692 Fuel Cell Systems			x		x	
6d	694 Wind Electric Systems		x			x	
6e	700 Emergency power					x	x
6f	705 Interconnected Electric Power Production Sources	x	x	x	x	x	
7	2018 NFPA 30 - Flammable and Combustible Liquids Code			x	x		
8	2015 NFPA 37 - Stationary Combustion Engines and Gas Turbines			x	x		
9	2015 NFPA 54 - National Fuel Gas Code			x	x		
10	2017 NFPA 58 - Liquid Petroleum Gas Code			x	x		
11	2016 NFPA 59A - Production/Storage/Handling of Liquified Natural Gas LNG			x	x		
12	2018 NFPA 99 - Healthcare Facilities Code	x	x	x	x	x	
13	2016 NFPA 110 - Emergency and Standby Power	x	x	x	x	x	
14	2016 NFPA 111 - Stored Electrical Energy Emergency and Standby Power Systems					x	
15	2016 NFPA 400 - Hazardous Materials Code			x	x	x	
16	NFPA 853 - Installation of Stationary Fuel Cell Power Systems			x			
17	NFPA 855 -Standard for the Installation of Stationary Energy Storage Systems					x	
18	Centers for Medicare & Medicaid Services (CMS)	x	x	x	x	x	
18a	2012 NFPA 99 - Healthcare Facilities Code						
18b	2012 NFPA 101 - Life Safety Code						

These codes/standards address:

- Air quality requirements, Rule 21 requirements for utility interconnection, requirements for local approval for siting of equipment in regard to aesthetics and accessibility
- The California Building Code as it pertains to housing of equipment - seismic certification and restraint for equipment serving and located in HCAI/OSHPD facilities
- Fire resistance ratings of rooms where equipment is located
- Location of equipment in relation to the healthcare facility and property and several other requirements
- The California Fire Code for the various on-site power generators and fuel storage systems
- Underground and above ground fuel tank requirements, location, local fire authority approval
- Energy Systems (CFC 12), and several other requirements
- The California Electrical Code which details requirements for electrical systems for healthcare buildings, addresses various on-site power generation systems and requirements for emergency power

Various NFPA Standards have been listed that provide requirements for fuel storage/delivery, location of equipment on property, Healthcare Facilities in general, Emergency and standby power, stored electrical energy for emergency and standby use, Hazardous materials code and the installation of stationary fuel cell power systems.

We recommend that Design Professionals use this as a checklist to help ensure that all aspects of code are taken into account for the planning and design of new systems to meet HSC §1418.22 requirements.

Please also see the following reminder lists;

https://hcai.ca.gov/document/fls-reminder-list-above-ground-fuel-storage-cbc

https://hcai.ca.gov/document/fls-reminder-list-epss-generator-cbc/

https://hcai.ca.gov/document/fls-reminder-list-underground-fuel-storage-cbc/

https://hcai.ca.gov/document/fls-reminder-list-fire-authority-approvals-cbc/

https://hcai.ca.gov/document/rem-list-fire-life-safety-construction-2016-cbc/

Please also see applicable PINs and CANs

https://hcai.ca.gov/construction-finance/codes-and-regulations/#CANs

https://hcai.ca.gov/construction-finance/codes-and-regulations/#PINs

VIII. SUBMITTAL INSTRUCTIONS AND TIMEFRAME REQUIREMENTS

Submittal Instructions:
The application for *SNF Backup Power Assessment* is an online submission via the eServices Portal – eClient Access web page (https://esp.oshpd.ca.gov). The user guide can be found at SNF Backup Power Assessment User Guide. The online application is a series of questions will present the various systems at a facility that must comply with HSC 1418.22. The user guide contains step by step instruction for submitting the request for assessment including the assessment questions.

~~During~~ As the responses to the questions are entered, potential requirements will compile. These requirements are intended to provide a list of documentation that will be needed to substantiate compliance. Information about the heating, cooling, emergency generator(s), and alternate power sources(s) systems in use at the facility is entered into the application.

Once the application for *SNF Backup Power Assessment* is submitted, a report is available that displays the results. It will include the questions, answers, requirements, along with the heating, cooling, emergency generator, and alternate power source(s) information entered into the application. The user guide explains how to print the report.

The assessment and review will focus on the following to determine compliance with HSC §1418.22:

- Heating System
- Cooling System
- Life-Safety Equipment (Ventilators, AED, Crash Carts)
- Oxygen-Generation Devices (Concentrators, Positive Pressure Apparatus, and large-scale oxygen generation)
- Emergency Generator(s)
- Alternate Power Source(s) (Other than generator)

The following are necessary attachments for the review to return a compliant assessment:

- Floor plan showing location of all systems and area of coverage

- Documentation substantiating compliance for each system listed above with HSC §1418.22
- Local approvals as required

Optional documentation

- Documentation of proposed remediation to bring the systems compliant.

If it is already known that certain systems are not compliant with HSC §1418.22 , it is still important to complete the submission of the assessment application to receive the review results.

Note: HCAI has developed a form for submitting a request for assessment via paper. See Appendix A for the form.

Northern California, contact:

Department of Health Care Access and Information
Office of Statewide Hospital Planning and Development
2020 W. El Camino Avenue, Suite 800
Sacramento, CA 95833
(916) 440-8300 phone or (916) 274-0102 fax

Southern California, contact:

Department of Health Care Access and Information
Office of Statewide Hospital Planning and Development
355 South Grand Avenue, Suite 1900
Los Angeles, CA 90071
(213) 897-0166 phone or (213) 217-8511 fax

If you need assistance in submitting the application, contact the eSP helpdesk at 916-440-8400 or eserv@hcai.ca.gov

Timeframe Recommendations:

For any existing skilled nursing facility:

- By **Month, 00, 202?**, the SNF owner shall submit to the Office a complete HSC §1418.22 evaluation for each building. It the evaluation form indicates that the building currently meets HSC §1418.22 requirements, and this is confirmed by HCAI, there are no more measures that need to be taken by the owner.

- When new work is required to meet HSC §1418.22 requirements, by **Month, 00, 202?**,, the SNF owner shall submit to the Office construction documents for HSC §1418.22 compliance projects.

- By **Month, 00, 202?**,, the SNF shall achieve compliance with HSC §1418.22 requirements.

IX 3-POTENTIAL ELECTRICAL DISTRIBUTION SYSTEMS SOLUTIONS

The new law clearly calls out for the requirement to have an alternate power source to back up:

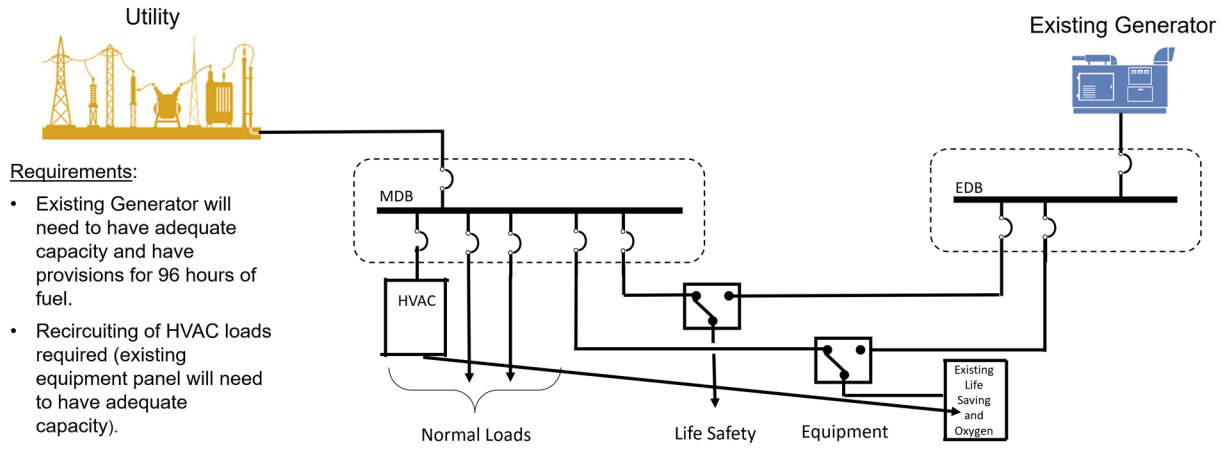
- Equipment required to provide safe temperature for residents (namely cooling),
- Life-saving equipment
- Oxygen-generating devices.

However, the new law does not specifically require that these systems be backed up by essential power. In an effort to assist the decision makers in finding the "best" approach to bring facilities in conformance with HSC §1418.22 for each facility, we are providing the following three (3) potential electrical system modifications.

The following three scenarios provide compliance options for existing SNFs to meet HSC §1418.22:

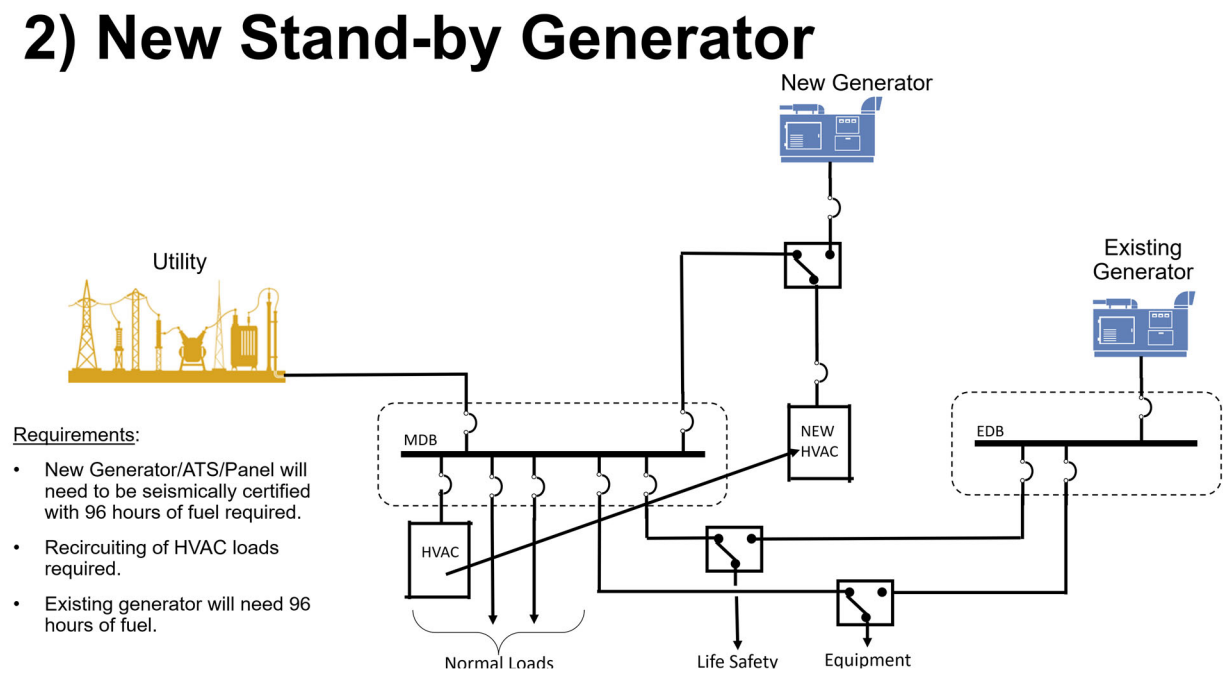
1) Add New Loads to Existing or Replacement Emergency Generator:
   - CEC ARTICLE 517.29 through 517.30 for SNF Subacute units
   - CEC ARTICLE 517.40 and 517.41 Essential Electrical Systems for Nursing Homes and Limited Care Facilities
2) New Alternate Source (Generator):
   - CEC ARTICLE 701 for legally required standby systems
3) New Healthcare Microgrid:
   - CEC ARTICLE 705, Interconnected Electric Power Production Sources

1) Existing Generator



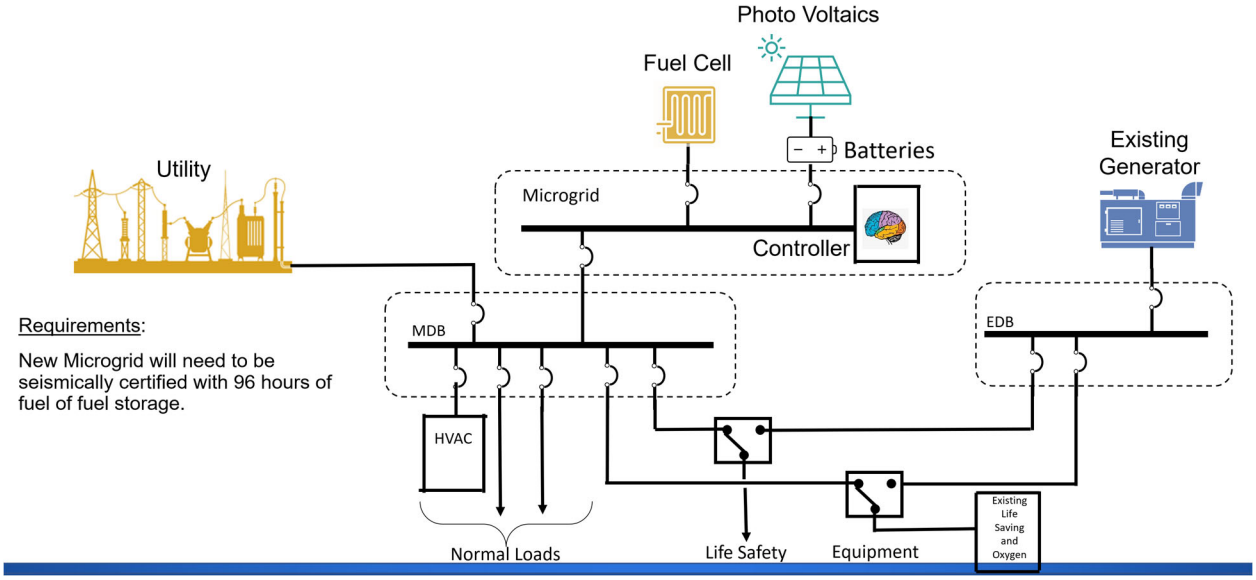
Add New Loads to Existing or Replacement Emergency Generator: Where an existing or replacement emergency generator meets Title 24, California Electrical Code, Part 3, ARTICLE 517 (Health Care Facilities) requirements and has adequate capacity to support the existing essential loads and added AB2511 loads required to maintain 96 hours of operation, the existing system could be considered compliant if:

The electrical distribution system is confirmed or modified to feed all loads associated with HSC §1418.22 (ie equipment required for safe temperatures, life-saving equipment, and oxygen-generating devices as identified above). For this scenario the replacement emergency generator and distribution equipment including any new panels feeding the required loads would need to be seismically certified. The emergency generator(s) will need to have provisions for 96 hours of fuel.



New or Additional Generator: A new alternate generator and associated equipment could be introduced into the system to feed new or additional loads necessary to meet HSC §1418.22 requirements. The new generator and equipment shall meet Title 24, California Electrical Code, Part 3, ARTICLE 701 (Legally Required Standby Systems) requirements, have special seismic certification, and fulfill the 96-hour on-site fuel requirements. The new standby system could be utilized to feed the cooling equipment, life-saving equipment, and oxygen-generating devices as identified above. In this scenario, the existing distribution system would need to be modified to transfer all loads from existing equipment to new equipment. The existing emergency generator would need to have 96 hours of fuel provisions.

3) New Microgrid Parallel w/Utility



New Healthcare Microgrid: A new healthcare microgrid could be introduced to the system with any combination of generator(s), turbine(s), fuel cell(s), photovoltaics, battery storage system, or other on-site Distributed Energy Resources (DER's) and be configured to parallel with a normal distribution board at the facility. The new system components shall meet requirements of Title 24, California Electrical Code, Part 3, ARTICLE 705 (Interconnected Electric Power Production Sources), have special seismic certification and fulfill the 96-hour fuel requirement. For this scenario, all new equipment including energy producers will need to be seismically certified. This approach would utilize the existing normal distribution system backed up by the alternate power source (microgrid) to feed all loads including the cooling equipment, life-saving equipment, and oxygen-generating devices. The existing Essential Electrical System (Title 24, California Electrical Code, Part 3, ARTICLE 517.42) will need to remain in operation, however the fuel system will not need to be modified to support 96 hrs of run time (Existing 6 hours min will be sufficient).

APPENDIX A

SNF ASSESSMENT FORM - *[OSHPD 2]*

Date:	
Facility ID:	
Facility Name:	
Building Number(s):	BLD-xxxxx
Licensed Beds:	Per BLD-xxxxx
Building Area(s) (SF):	

Heating System Information	
Heating System Type:	
Fuel Type	
Cooling System Information	
Heating System Type:	
Power Source	
Emergency Generator	
Make	
Model	
Size (KVA and Voltage)	
Fuel Type	
On-site Fuel Capacity (Hours)	
On-Site Fuel Storage Operating Hours	
Alternate Power Source	
Make	
Model	
Type	
Size (KVA and Voltage)	
Fuel Type	
On-site Fuel Capacity (Hours)	
On-Site Fuel Storage Operating Hours	

Required Documents:

- Floor Plan/Site Plan showing location of systems and area of coverage.
- Documentation substantiating compliance for all systems covered in HSC 1418.22

Facility key maps are available: https://hcai.ca.gov/construction-finance/facility-detail/

Optional Documents:

- Proposed remediation for non-compliant systems.

APPENDIX A - Continued

SNF Backup Power Source Assessment
Place an 'X' in Yes or No for the system in use at the facility. If N/A, leave answer blank.

Section	Topic	Question Nbr	Question	Yes/No
Safe Temperature for Residents Life-saving Equipment	Heating Equipment	1	Are there heating systems currently in place at the facility?	
		2	Does existing heating system meet HSC 1418.22 requirements for maintaining a safe heating temperature in patient care areas for 96 hours (i.e. above 71 F)	
		3	Is heating provided at resident's unit?	
		4	Is heating provided by a central plant?	
		5	Provide a floor plan showing existing heating units and area of coverage is included in assessment submittal?	
		6	Is heating system equipment connected to emergency power?	
		7	Is the heating system equipment connected to an alternate power source (not emergency)?	
		8	Will heating system work in event of utility power outage?	
	Air Conditioning	9	Does the facility currently meet HSC 1418.22 requirements regarding run-time for alternate power source (if required) to maintain safe heating temperature for 96 hours during a utility outage?	
		10	Is mechanical cooling provided at the facility?	
		11	Does existing cooling system meet HSC 1418.22 requirements for maintaining a safe cooling temperature in patient care areas (i.e. below 81 F)?	
		12	Is cooling provide by central air-handling system(s)?	
		13	Is cooling provided by a non-central recirculating system at resident's unit?	
		15	Is cooling system equipment connected to emergency power?	
		16	Is the cooling system equipment connected to an alternate power source (not emergency)?	
		17	Will cooling system work in event of utility power outage?	
		18	Does the facility currently meet HSC 1418.22 requirements regarding run-time for alternate power source (if required) to maintain safe cooling temperature for 96 hours during a utility outage?	

APPENDIX A - Continued

Section	Topic	Question Nbr	Question	Yes/No
Life-Saving Equipment	Ventilators	19	Are there ventilators using 120V for operation/charging at the facility?	
		19a	Are the ventilators connected to emergency power?	
		19b	Will the ventilators work in event of utility power outage?	
	AEDs	20	Are there automated external defibrillators (AED) using 120V for operation/charging at the facility?	
		20a	Are the AED connected to emergency power?	
		20b	Will the AED work in event of utility power outage?	
	Crash Carts	21	Are there Crash Carts using 120V for operation/charging at the facility?	
		21a	Are the Crash Carts connected to emergency power?	
		21b	Will the Crash Carts work in event of utility power outage?	
	Other Equipment	22	Are there other life-saving equipment at the facility?	
		22a	Are the other life-saving equipment connected to emergency power?	
		22b	Will the other life-saving equipment work in event of utility power outage?	
		23	Does the facility currently meet HSC 1418.22 requirements for Life-saving equipment backed up by alternate power source for 96 hrs.?	
Oxygen-Generating Devices	Concentrators	24	Are there Concentrators using 120V for operation/charging at the facility?	
		24a	Are the Concentrators connected to emergency power?	
		24b	Will the Concentrators work in event of utility power outage?	
	Positive Pressure Apparatus	25	Are there Positive Pressure Apparatus (PPA) using 120V for operation/charging at the facility?	
		25a	Are the PPA connected to emergency power?	
		25b	Will the PPA work in event of utility power outage?	
	Oxygen System	26	Does the facility utilize an on-site, large-scale oxygen generating systems?	
		26a	Are the oxygen generation devices connected to emergency power?	
		26b	Will the oxygen generation devices work in event of utility power outage?	
		27	Does the facility currently meet HSC 1418.22 requirements for Oxygen-generating devices backed up by alternate power source for 96 hours?	

APPENDIX A - Continued

Section	Topic	Question Nbr	Question	Yes/No
Existing Generator(s)	Emergency Generator(s)	28	Does your facility currently have a permanent on-site emergency generator?	
		28a	Does the emergency generator have 96 hours of on-site fuel storage?	
		28b	Does the emergency generator have a minimum of 6 hours of on-site fuel storage?	
		28c	Does the facility have a fuel delivery agreement to supply the generator(s) with fuel to comply with the 96 hours operational requirements of HSC 1418.22?	
	Legally Required Standby Generator	29	Does your facility currently have a Legally Required Standby generator?	
		29a	Do all components of the Legally Required Standby system have special seismic certification?	
		29b	Does the Legally Required Standby generator have 96 hours of on-site fuel storage?	
		29c	Does the Legally Required Standby generator have a minimum of 6 hours of on-site fuel storage?	
		29d	Does the facility have a fuel delivery agreement to supply the Legally Required Standby generator with fuel to comply with the 96 hours operational requirements of HSC 1418.22?	
Existing Alternate Power Source	Alternate Power Source (DER)	30	Does your facility currently have a permanent on-site alternate power source (not including emergency generator)?	
		30a	Does the alternate power source backup the entire normal service?	
		30b	Do all components of the alternate power source have special seismic certification?	
		30c	Does the alternate power source have 96 hours of on-site fuel storage?	
		30d	Does the alternate power source have a minimum of 6 hours of on-site fuel storage?	
		30e	Does the facility have a fuel delivery agreement to supply the alternate power source with fuel to comply with the 96 hours operational requirements of HSC 1418.22?	

APPENDIX B

[OSHPD 2]

AB 2511 FREQUENTLY ASKED QUESTIONS

ADD LATEST LIST