



### **PIN 74**

Skilled Nursing Facility (SNF) alternate source of power to maintain safe temperatures, maintain availability of life-saving equipment, and maintain oxygen-generating devices.



POLICY INTENT NOTICE (PIN)

#### SUBJECT

Skilled Nursing Facility (SNF) alternate source of power to maintain safe temperatures, maintain availability of life-saving equipment, and maintain oxygen-generating devices.

PIN: 74
Effective: XX/XX/XXXX



#### PURPOSE

The purpose of this Policy Intent Notice (PIN) is to provide a policy for the implementation of alternate sources of power to maintain safe temperatures, maintain availability of life-saving equipment, and maintain oxygen-generating devices for Skilled Nursing Facility (SNF) buildings as mandated by Assembly Bill 2511 (Chapter 788, Statutes of 2022).

#### BACKGROUND

SNFs have previously been required to provide 6 hours of on-site fuel storage for emergency power system sources such as emergency generators. AB 2511 requires that SNFs have an alternative source of power to protect resident health and safety for no fewer than 96 hours for power outages that may result from a public safety power shutoff, an emergency, a natural disaster, or other cause. An alternative source of power is defined as a source of electricitly 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. The Centers for Medicare & Medicaid Services (CMS) may have additional certification requirements that will still need to be met by a SNF. These requirements are enforceable by the California Department of Public Health (CDPH) by January 1, 2024.



# **PURPOSE**

The purpose of this Policy Intent Notice (PIN) is to provide a policy for the implementation of alternate sources of power to maintain safe temperatures, maintain availability of life-saving equipment, and maintain oxygen-generating devices for Skilled Nursing Facility (SNF) buildings as mandated by Assembly Bill 2511 (Chapter 788, Statutes of 2022).



### **BACKGROUND**

SNFs have previously been required to provide 6 hours of on-site fuel storage for emergency power system sources such as emergency generators and have not been required to provide emergency power for cooling systems. AB 2511 requires that SNFs have an alternative source of power to protect resident health and safety for no fewer than 96 hours for power outages that may result from a public safety power shutoff, an emergency, a natural disaster, or other cause. An alternative source of power is defined as 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. The Centers for Medicare & Medicaid Services (CMS) may have additional certification requirements that will still need to be met by a SNF. These requirements are enforceable by the California Department of Public Health (CDPH) by January 1, 2024.



### THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 1418.22 is added to the Health and Safety Code, to read:

- **1418.22.** (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.



### **POLICY**

This PIN implements the requirements specified in HSC §1418.22. The Department of Health Care Access and Information (HCAI) will provide a technical basis from which a SNF can create a plan for identifying existing conditions that are already in compliance with the statute or to develop a construction project to achieve a compliant condition as required for acceptance by CDPH. The methods outlined and details described in this PIN indicate acceptable methods and details for achieving compliance with the law. These may be approved by HCAI in either the office or the field. Other methods proposed by the design professional of record to solve a particular problem shall be reviewed by HCAI and, if approved, may also be an acceptable solution.



# **DEFINITIONS/REQUIREMENTS**

#### Safe Temperature for Residents

"Comfortable temperature" under normal operating conditions: Title 22, California Code of Regulations, Section 72657, Mechanical Systems, requires that "heating, air conditioning and ventilation systems shall be maintained in normal operating conditions to provide a comfortable temperature and shall meet the requirements of Section T17-105, Title 24, California Administrative Code."

Title 24, California Code of Regulations, California Mechanical Code, Chapter 4, VENTILATION AIR, Table 4-A lists temperature range requirements for locations in the building based on use and function. Patient areas are required to have mechanical systems designed to maintain temperatures between 70°-75°F.

"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." Furthermore, 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.)



# **DEFINITIONS/REQUIREMENTS**

### Life-saving Equipment

Life-saving equipment, where provided, shall have power provisions for a period of 96 hours from an alternate source of power. Life-saving equipment may include but shall not be limited to ventilators, AEDs, crash carts with defibrillators, intravenous therapy equipment, feeding pumps, IV pumps, nebulizer machines, suction equipment and medication dispensing machines.

### Oxygen-generating Devices

Oxygen-generating devices, where provided, shall have power provisions for a period of 96 hours from an alternate source of power. 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.



# **ANALYSIS**

#### **Power Source**

Any new or existing onsite essential and alternate power source shall conform to one or more of the following requirements as applicable:

- Title 24, California Electrical Code, Part 3, ARTICLE 517.29 through 517.30 for SNF Subacute units
- 2) Title 24, California Electrical Code, Part 3, ARTICLE 517.40 and 517.41 Essential Electrical Systems for Nursing Homes and Limited Care Facilities
- 3) Title 24, California Electrical Code, Part 3, ARTICLE 701 for legally required standby systems
- 4) Title 24, California Electrical Code, Part 3, ARTICLE 705, Interconnected Electric Power Production Sources



#### Power Source (continued)

#### **Application Code Sections and Approvals**

The following requirements are applicable:

- Special seismic certification of equipment, Title 24, California Building Code, Part 2, Volume 2, Section 1705.13.3
- 2) 96 hours of on-site fuel storage (or an approved Emergency Preparedness plan).

#### **Acceptable Outage Durations**

- 1) Life-Saving Equipment and Oxygen Generating equipment will be required to be restored to back up power within 10 seconds of failure of normal power source.
- 2) Cooling and heating equipment will be restored to power within sufficient time to maintain temperature between 71-81 degrees Fahrenheit.



## **ANALYSIS**

#### 96 Hours of On-Site Fuel Storage

Where generators are used as an alternative source of power, sufficient fuel onsite shall be maintained to sustain generator operation for no less than 96 hours or contract arrangements shall be made 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. On-site fuel storage shall not be less than 6 hours capacity in a minimum of one tank. For instances where 96 hours of on-site fuel is not provided, CDPH must approve any alternate arrangements that have been made for the delivery of fuel to meet this requirement.



### **Alternative Source of Power**

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 to provide sufficient power to comply with state requirements for long-term care facilities. For all options a minimum of 6 hours of on-site fuel is required.



# **ANALYSIS**

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

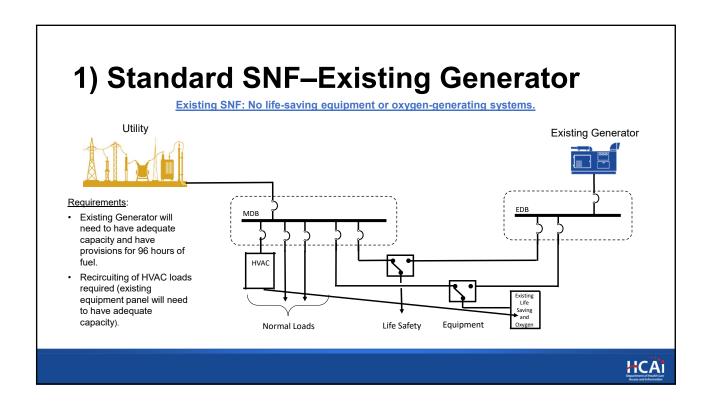
- 1) Add New Loads to Existing or Replacement Emergency Generator:
- ARTICLE 517.29 through 517.30 for SNF Subacute units
- ARTICLE 517.40 and 517.41 Essential Electrical Systems for Nursing Homes and Limited Care Facilities
- 2) New or Additional Generator: CEC ARTICLE 701 for legally required standby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

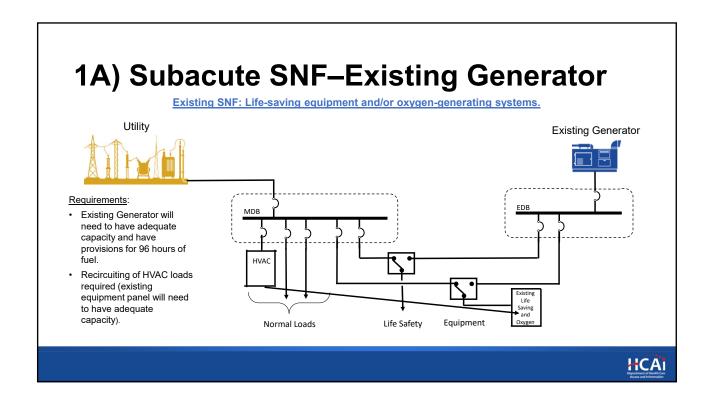


The following three scenarios provide compliance options for existing SNFs to meet HSC §1418.22:

1) Add New Loads to Existing or Replacement Emergency Generator: 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 loads required to maintain 96 hours of operation, the existing system could be considered compliant if confirmed or modified to meet HSC §1418.22 for safe temperatures, life-saving equipment, and oxygengenerating devices as identified above. A 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.

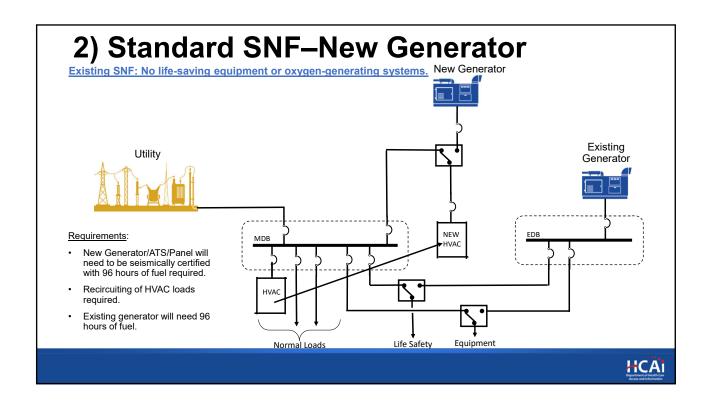


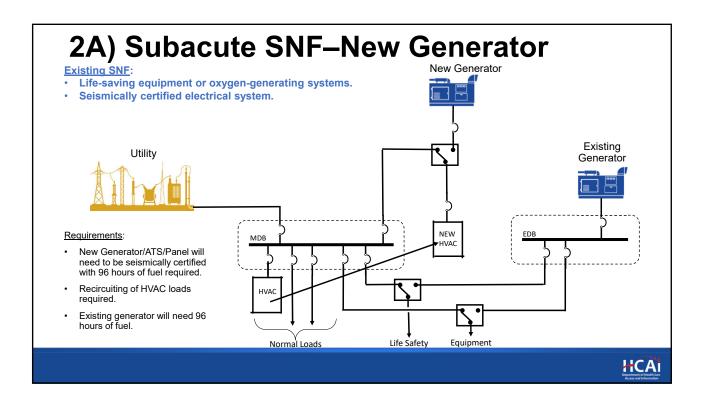




2) New or Additional Generator: A new alternate generator and associated equipment could be introduced into the system to feed new or additional loads necessary to meet HSC §1418.22 requirements. The new generator and equipment shall meet Title 24, California Electrical Code, Part 3, ARTICLE 701 (Legally Required Standby Systems) requirements, have special seismic certification, and fulfill the 96-hour on-site fuel requirements. The new standby system would need 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. If some loads identified in HSC §1418.22 are to remain on existing facility emergency system, the existing emergency generator would need to have 96 hours of fuel provisions.

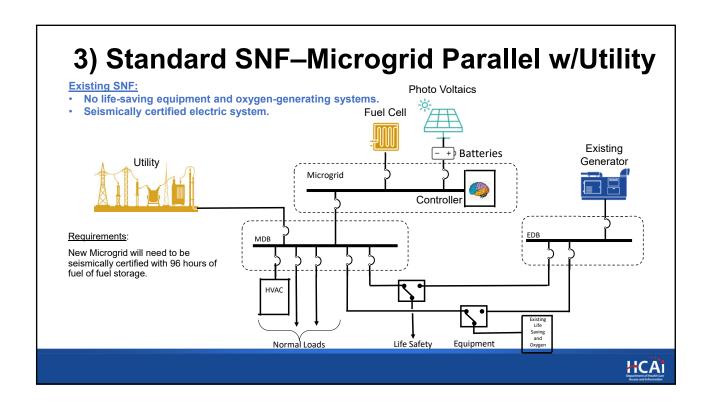


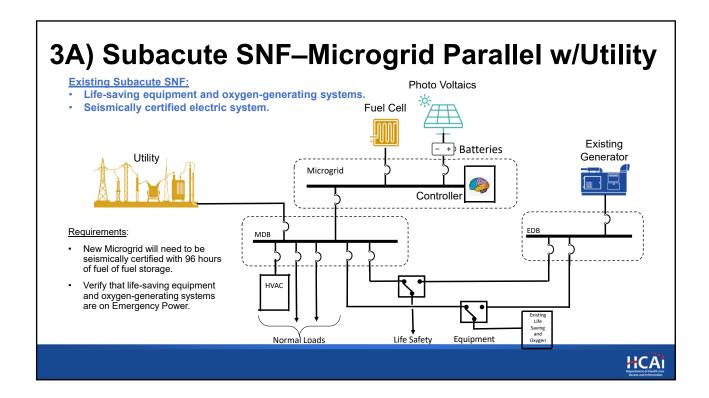




3) New Healthcare Microgrid: A new healthcare microgrid could be introduced to the system with any combination of generator(s), turbine(s), fuel cell(s), photovoltaics, battery storage system, or other on-site Distributed Energy Resources (DER's) and be configured to parallel with a normal distribution 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 as is.







# **On-Site Source of Power Assessment**

SNFs shall submit an evaluation of on-site sources of power under the provisions of HSC §1418.22. Appendix A provides an Assessment Form which can be used to identify items for inclusion in the Assessment Report. The assessment report shall include existing conditions and describe proposed changes that will result in a SNF's compliance with HSC §1418.22. The Assessment Report shall be submitted electronically using the eServices Portal located on the HCAI website. As part of HCAI's charge from the Legislature, this reporting tool will be used by SNFs and HCAI to achieve the implementation goals of the statute.



#### APPENDIX A

## SKILLED NURSING FACILITY SAMPLE ASSESSMENT CHECKLIST OF ON-SITE SOURCE OF POWER

HSC §1418.22 Compliance Requirements	Yes	No	Description/Explanation
afe-temperature for residents			
Heating			
Are there heating systems currently in place at facility?			
Does existing heating system meet HSC §1418.22 requirements (maintains temps above 71 deg)			
List Equipment and fuel source(s)			
Is heating provided at unit or is there a central system for the facility?			
Is heating system connected to emergency power?			
Will heating system work in event of utility power outage?			
Does the facility currently meet HSC §1418.22 requirements - if not, attach a page and propose remediation to bring facility in compliance with bills requirements.			
Cooling	7		
Are there cooling systems currently in place at facility?			
Does existing cooling system meet HSC §1418.22 temperature requirements (maintains temps below 81 deg in patient care areas?)			
List Equipment			
Is cooling provided at unit or is there a central system for the facility?			
Provide marked up floor plan showing existing units and area of coverage.			
Is cooling system connected to emergency power?			
Will cooling system work in event of utility power outage?			
Does the facility currently meet HSC §1418.22 requirements - attach a page and propose remediation to bring facility in compliance with bills requirements.			
Life-saving Equipment			
Are there any of the following at your facility:		16.	
120V operating/charging - Ventilators	1		



# FREQUENTLY ASKED QUESTIONS

Q1: The bill states "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." PIN 74 specifically states 6 hours of fuel onsite minimum, with arranged delivery. How can we ensure that if we have 6 hours of fuel on site that a delivery can be made within this time period? (note: during earthquakes the roads might be down)

**A1:** Demonstration of compliance with this requirement will need to be included in the assessment report submitted to HCAI. Acceptance by CDPH is required.

**Q2:** If PV's are used as a component of the alternate source, would just the feed to building be evaluated for code and AB 2511 compliance or would the PV's, collectors, inverters etc., need to be seismically certified?

**A2:** If the PV's or any other Distributed Energy Resource (DER) are used as a component of the alternate source designed to provide back-up for cooling equipment, life-saving equipment and oxygen generating devices, the entire system: PV panels, collectors, inverters etc., would need to meet the requirements of AB 2511, (ie have special seismic certification and have provisions for 96 hrs of run time.)



**Q3:** Will the existing electrical infrastructure need to be special seismically certified to meet AB 2511 requirements?

**Q3:** No, it is assumed that the existing facilities are code compliant, so just the new equipment including DER's, ATS's, Distribution Boards, Panels etc. would need to have special seismic certification.

**Q4:** Will existing HVAC equipment need to be special seismic certification to meet ABH 2511 requirements?

**A4:** Existing HVAC equipment will not be evaluated for special seismic certification for AB 2511 driven upgrades. The new bill only addresses new sources.



# FREQUENTLY ASKED QUESTIONS

**Q5:** If fuel cells are used as a component of the alternate source, and they require natural gas service, which are required to have seismic switches to shut off gas service, in the event of an earthquake, how can we meet 6 hrs min on site fuel requirements?

**A5:** We have not seen any designs to date for SNF's to address this challenge. One approach for natural gas DER's would be to provide with a dual fuel option (natural gas and propane for instance) and to provide 6 hrs of propane stored on site, with contracts in place for delivery of propane (if acceptable by CDPH) to meet the 96 hr requirement.

Q6: Can back-up systems be provided that are not seismically certified?

**A6:** All components of required alternate source(es) added to meet AB 2511 requirements will need to have special seismic certification to ensure that they can provide power "during power outages that may result from a public safety power shutoff, an emergency, a natural disaster, or other cause", which is the language contained in the bill.



Q7: It was recommended that if the facility intends to shelter occupants in place that kitchen/cooking facilities should be required to be powered by the alternate power source.

A7: HCAI does not intend to check power sources for kitchen/cooking facilities to show compliance with AB 2511. Note: CMS Guidance for Emergency Preparedness-Appendix Z of the State Operations Manual (SOM) requires facilities to develop an emergency preparedness plan and includes language for provisions including, but not limited to, food and water for facilities whether they evacuate or shelter in place.

Please see SOM Appendix Z for additional and more specific CMS requirements.

Q8: What is the acceptable delay time for alternate loads to be picked up?

A8: We have added the following requirements to PIN 74 to address acceptable delay times:

- 1. Life-Saving Equipment and Oxygen Generating equipment will be required to be restored to back up power within 10 seconds of failure of normal power source
- 2. Cooling and heating equipment will be restored to power within sufficient time to maintain temperature between 70-81 degrees Fahrenheit.



# FREQUENTLY ASKED QUESTIONS

**Q9:** Could the alternate system be used on a daily basis, or does it need to remain "off" and only used when normal power to the site is disrupted?

**A9:** Normally off and normally on backup systems are acceptable. Three possible configurations for the alternate system(s) are:

- 1) CEC 517 Healthcare Essential Electrical System normally off
- 2) CEC 701 Legally required standby system normally off
- 3) CEC 705- Interconnected Electric Power Production Source normally on

For both the "normally off" and the "normally on" systems, the 96 hour fuel back-up (6 hrs on site min) must be maintained at all times. Note CDPH will need to sign off on any designs that do not provide 96 hours of fuel on site.

Q10: How will HCAI handle fuel suppliers, required to guarantee fuel delivery if 96 hrs of fuel not stored on site?

**A10:** If the facility decides to not store 96 hrs of fuel on site, they will need to store a minimum of 6 hrs of fuel on site, and arrange for fuel supplier to guarantee fuel delivery within 6 hrs sufficient to operate back up power equipment for 96 hrs. Demonstration of compliance with this requirement will need to be signed off by CDPH.



**Q11:** If SNF's have been permitted previously, can the design team assume that the facility have met life safety back up requirements?

**A11:** Yes, however please note this new bill does not address life safety branch equipment, this new law requires life-saving equipment to be backed up for 96 hrs, by a seismically compliant system. Life-saving equipment has a different definition than life safety branch equipment:

- <u>Life-Saving equipment</u> May include but shall not be limited to ventilators, AEDs, crash carts with defibrillators, intravenous therapy equipment, feeding pumps, IV pumps, nebulizer machines, suction equipment, and medication dispensing machines.
- <u>Life Safety branch</u> Shall supply power for egress lighting, exit signs, alarm and alerting systems, communication systems, lighting in dining and recreation area(s), lighting and receptacles at Generator set location, cab lighting and controls for elevators as detailed in CEC 517.43

Q12: How will designers address load calculations for cooling equipment?

**A12:** The current code CEC 220 and HCAI PIN 38 list acceptable means of addressing load calculations, based on the nature of mechanical loads (cooling) required to be backed up, any existing demand load calculations associated with mechanical equipment will need to be based on values metered during the summer months (June 1– August 31).



# FREQUENTLY ASKED QUESTIONS

**Q13:** Can the designer use load shedding values, or take into account partial use of cooling equipment if existing equipment is sized to cool below 81 degrees, in load calculations?

**A13:** For load calculations that do not use nameplate data and/or CEC values for mechanical systems, documentation will need to be provided to demonstrate, automation of set-back conditions and anti-override provisions and provide calculations to justify loads.

**Q14:** Does the alternate power source need to provide power for existing HVAC equipment? Will other options be considered.

**A14:** The PIN does not specify the method of cooling required to allow flexibility for each designer to determine the most appropriate equipment to meet the temperature control requirements. All submitted plans will be reviewed for code compliance and compliance with the new law.



**Q15:** What load should be used to determine required fuel quantities to meet 96 hr run time requirements.

**A15:** The actual demand load taken at 125% should be used to determine fuel quantities required.

**Q16:** What are facilities required to do if their facility already meets the requirements of PIN 74

**A16:** The facilities will need to fill out the survey attached to PIN 74 and submit for concurrence.



# FREQUENTLY ASKED QUESTIONS

**Q17:** There is no defined review timeline for plans; however facilities are expected to have construction completed by the Jan 1, 2024. Is it expected that the plan reviews and approvals be completed prior to implementation?

A17: We understand the timeline is short. Completeness of plans that are code compliant and address the new AB 2511 requirements will affect review time. Complete code compliant plans can be reviewed and returned quickly. Remember that added above grade equipment added to sites will need local approval as well as HCAI approval. Construction cannot start until after plan approval and a building permit is issued.



Q18: In order to meet the 96-hour fuel requirements can an above ground tank be utilized?

**A18:** The PIN does not go into detail about methods of fuel storage. Above grade tanks that are designed to meet code would be acceptable.

Q19: Can a hybrid solution be used to meet 96 hr back-up requirements.

**A19:** Yes, multiple resources can be utilized to meet these requirements. Calculations will need to be provided to detail how the 96-hour back-up is provided. Commissioning of the final installation will be required to demonstrate that the installation meets criteria presented in design and calculations.



# FREQUENTLY ASKED QUESTIONS

**Q20**: Based on the fact that CMS requires compliance with 2012 NFPA 99 and 2012 NFPA 101, CMS requirements will not be met if equipment other than an emergency generator is used for the code mandated Emergency power source. Will this affect the approach to AB 2511 upgrades.

**A20:** Possibly, please note there are multiple acceptable solutions. Three possible configurations of the alternate system(s) are:

- 1) CEC 517 Healthcare Essential Electrical System
- 2) CEC 701 Legally required standby system
- 3) CEC 705- Interconnected Electric Power Production Source
- For the CEC 517 solution where the code mandated emergency power requirements are fed by the same source that feeds the new AB 2511 loads, the source will need to be a generator to qualify for Federal reimbursements. For the CEC 701 and CEC 705 solutions, which leave the existing generator as is and introduces new sources to back up AB 2511 loads, the system would meet CMS requirements even if sources other than emergency generators are used.
- Note: as CMS requirements are different from current code requirements, if our office determines that the
  proposed design meets current code, but does not meet CMS requirements, we will only provide a blue pencil (for
  your information only) comment.







Thank you