

High-Performance Measure Details

Measure Name VRF Systems with Occupancy-Based Controls	Use Category HVAC - Space Heating Electrification
Effective Date May 25, 2026	End Date Current
Version 1.2	Measure Code LM401
Measure Stage Early Adoption	

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Technology Summary

Variable Refrigerant Flow (VRF) systems are commonly used in commercial and multifamily buildings because they provide high-efficiency heating and cooling, flexible zoning, and independent space conditioning across multiple occupied areas. Unlike traditional centralized air systems that distribute conditioned air from a single air-handling unit, VRF systems use distributed indoor fan coil units connected to one or more outdoor units through refrigerant piping. This configuration allows individual zones to respond to localized heating and cooling loads rather than conditioning the building as a single uniform zone.

Occupancy-based HVAC controls have historically been most effective in centralized air systems where ventilation, airflow, fan energy, and space conditioning are closely linked. In many modern VRF applications, ventilation is often provided separately through a Dedicated Outdoor Air System (DOAS) or other centralized ventilation approach, while the VRF system independently serves zone-level sensible heating and cooling loads. As a result, occupancy-based controls applied to VRF systems may not reduce ventilation energy in the same way they do in traditional air-side systems, but they can still reduce unnecessary zone conditioning, compressor operation, and indoor fan energy during periods of vacancy.

VRF Systems with Occupancy-Based Controls focuses on applying real-time occupancy signals to VRF indoor units serving independently controlled HVAC zones. Occupancy sensors installed within individual spaces are used to automatically place the associated VRF indoor unit into setback or setup operation when the space is vacant and restore occupied setpoints when occupants return. This is especially relevant for intermittently occupied spaces such as offices, classrooms, conference rooms, amenity spaces, retail tenant areas, and other zones with variable occupancy patterns.

This HPM is currently focused on VRF systems with occupancy-based controls and is not intended to establish a broader eligibility pathway for all HVAC system types. By shifting VRF operation from fixed schedule-based conditioning toward occupancy-responsive zone control, the measure is intended to better align HVAC energy use with actual space utilization. The HPM supports broader CEDA goals by encouraging advanced HVAC controls, improving operational efficiency in electrified buildings, and collecting market and performance data to inform future code-readiness pathways for distributed and decoupled HVAC system architectures.

Alignment with CEDA Program Goals

The CEDA program supports the implementation of energy efficiency measures that support Code Readiness's Long Term Tactical Plan (LTTP) to drive the goals of electrification, decarbonization, and load reduction.

Projects must meet one of the CEDA Inducement Requirements identified in the next section to receive an inducement and will be evaluated for level of interest in metering to support Code Readiness Objectives. This measure meets the CEDA program goals as follows:

- **Building partnerships with market stakeholders** by consulting on innovative technologies and best practices in energy efficiency, which can lead to the development of more effective solutions and accelerate the adoption of new technologies. As teams adopt the measure, this increases the volume of engineers able to design the equipment, contractors capable of installing the equipment, and owners able to operate the equipment.
- **Increasing the supply of high-performance measures and all-electric buildings** by combining electrification with energy efficiency, which can result in projects implementing measures to achieve greater energy savings, reduced emissions, and overall improved building performance. As more buildings specify and install occupancy-based controls in commercial buildings, this helps to increase the adoption of OBC in the market for others to use, including beyond new construction.
- **Increasing the demand for high-performance measures and all-electric buildings** by pushing for electrification that drives the need for technological advancements, supporting economic growth opportunities through innovation, and raising awareness of the benefits of electrification to increase consumer adoption. As demand in the market increases for newer technologies, the long-term benefit is increased demand for manufacturers and suppliers to provide additional options available in the market.
- **Advancing new high-performance measure technology** by raising public awareness about new technologies and their benefits, helping build acceptance and demand through market support advocacy efforts that can influence stakeholder decisions that enable technological innovation.
- **Providing Codes & Standards with projects of interest** to collect metered data that will inform future California energy codes.

CEDA Inducement Requirements

This measure addresses a market and implementation gap in the application of real-time occupancy-based controls to commercial Variable Refrigerant Flow (VRF) systems. While VRF systems commonly provide zone-level temperature control and programmable scheduling, projects may not consistently use occupancy signals to reduce unnecessary conditioning of intermittently occupied or vacant spaces.

To be eligible, the project shall install qualifying occupancy-based controls for VRF indoor units or fan coils serving independently controlled HVAC zones. Qualifying VRF systems shall be commercial VRF multi-split air-conditioning or heat pump systems covered by AHRI 1230 and subject to applicable California Title 24, Part 6 VRF equipment efficiency requirements. Eligibility shall be documented through manufacturer submittals, AHRI certification documentation, or equivalent approved equipment documentation.

Where the qualifying VRF system is served by a separate DOAS or other centralized ventilation system, the occupancy-based control strategy may also provide occupancy status to the ventilation control system where permitted by code and supported by the approved sequence of operations. Ventilation reduction, reset, or shutoff is not required for HPM eligibility, but projects that can document coordinated occupancy-based ventilation control are of additional Code Readiness interest, particularly where all spaces within a controlled ventilation zone can be verified as vacant.

This HPM is not intended to apply to small-capacity mini-split or multi-zone heat pump systems rated only under AHRI 210/240, or to systems not documented as AHRI 1230 VRF multi-split equipment. Eligibility shall be based on the submitted equipment rating/certification path rather than marketing terminology alone.

The occupancy-based control strategy shall use real-time zone occupancy input to automatically transition qualifying VRF indoor units or fan coils between occupied operation and temperature setback/setup operation when the served zone is vacant and restore occupied operation upon re-occupancy. Schedule-only setback strategies, unconfigured control capabilities, or occupancy-based controls that are not enabled and operational at project turnover shall not qualify.

System Design Requirements

1. VRF System Requirements

- a. The project shall install qualifying VRF indoor units or fan coils serving independently controlled HVAC zones. Qualifying VRF equipment shall be part of a commercial VRF multi-split air-conditioning or heat pump system covered by AHRI 1230 and documented through manufacturer submittals, AHRI certification documentation, or equivalent approved equipment documentation.
- b. The VRF system shall provide independent zone-level temperature control for each qualifying HVAC zone.
- c. Mini-split or multi-zone heat pump systems rated only under AHRI 210/240, or systems not documented as AHRI 1230 VRF multi-split equipment, shall not qualify under this HPM.
- d. The VRF controls shall maintain manufacturer-required operating limits and shall not disable safety controls, freeze protection, humidity protection, condensate protection, or other required equipment protection functions.

2. Occupancy-Based Control Requirements

- a. Occupancy-based controls shall use real-time occupancy input to automatically place the associated VRF indoor unit or fan coil into temperature setback or setup operation when the served zone is vacant and restore occupied operation upon re-occupancy.
- b. The control strategy shall exceed standard schedule-based setback capability required by Title 24 Section 110.2(c)1 by using occupancy input rather than relying solely on programmed time-of-day schedules.

- c. Occupancy sensors shall be provided for each qualifying controlled HVAC zone or served space and shall be located to reliably detect normal occupant activity based on the room layout and occupancy pattern.
- d. Occupancy signals shall be integrated with the VRF controller, thermostat, BAS, EMS, or equivalent control platform so that vacancy directly initiates the setback/setup sequence for the associated VRF indoor unit or fan coil.
- e. The sequence of operations shall document the occupied setpoints, vacant setback/setup setpoints, vacancy timeout period, and automatic recovery sequence.
- f. The occupancy-based setback/setup function shall be configured, enabled, and verified at project turnover, and shall not be limited to unused or future control capability.
- g. Occupancy-based setback/setup operation shall not disable required ventilation, ventilation controls, safety controls, humidity protection, freeze protection, or other code-required or manufacturer-required functions unless the ventilation reduction or shutoff strategy is separately permitted by applicable code, documented in the approved sequence of operations, and coordinated with the served ventilation zone.

Supporting Documentation Requirements

1. Provide engineered, stamped, and permitted construction drawings demonstrating the qualifying VRF system and occupancy-based control scope.
2. Provide a sequence of operations describing the occupancy-based control strategy for the qualifying HVAC zones.
 - a. Where occupancy-based ventilation reset, reduction, or shutoff is included, provide a ventilation control sequence identifying the controlled ventilation zone, associated VRF zones or spaces, vacancy determination logic, and safeguards for maintaining code-required ventilation.
3. Provide equipment submittals and manufacturer specifications for the VRF equipment, occupancy sensors, and associated occupancy-based control devices.
4. Provide documentation demonstrating that occupancy-based setback functionality has been configured and enabled for the qualifying HVAC zones.
5. Provide equipment-cost information for the occupancy-based control scope.

Incremental Measure Cost

The Incremental Measure Cost (IMC) values presented below are intended for CEDA program planning, inducement calibration, and portfolio-level screening purposes only. These values represent normalized estimates of incremental first cost associated with implementing occupancy-based control strategies for qualifying VRF systems relative to baseline VRF systems using standard schedule-based thermostat or controller operation.

Unlike equipment-driven HVAC measures, this measure is primarily a controls and operational enablement measure. Incremental costs are generally associated with occupancy sensors, controls hardware, controls integration, programming, commissioning, functional testing, and documentation of occupancy-responsive operation. The IMC is not intended to include the full cost of the VRF system itself, except where specific controls components or integration requirements are necessary to enable the qualifying occupancy-based control sequence.

These values are not intended to represent contractor bids, reimbursement amounts, or project-specific reconciliation costs.

Base Case

The Base Case represents a code-compliant commercial VRF multi-split system covered by AHRI 1230 and utilizing standard programmable thermostat, controller, or BAS scheduling capability in accordance with applicable California Title 24, Part 6 requirements. Baseline operation assumes qualifying VRF indoor units or fan coils provide independent zone-level temperature control and operate primarily using programmed time-of-day schedules, without real-time occupancy-responsive setback/setup control logic.

The Base Case includes:

- Code-compliant VRF equipment meeting applicable Title 24 minimum efficiency requirements
- VRF indoor units or fan coils serving independently controlled HVAC zones
- Standard programmable thermostat, controller, or BAS scheduling capability
- Scheduled occupied and unoccupied HVAC operation
- Conventional zone-level temperature control
- Standard controls startup and commissioning practices
- Typical VRF operational practices for public, nonresidential, and high-rise multifamily common-area applications

This Base Case reflects standard industry practice for VRF systems using schedule-based HVAC operation rather than occupancy-responsive zone conditioning strategies. It does not include occupancy sensors integrated with the VRF control sequence to automatically initiate zone-level setback/setup operation based on real-time vacancy conditions.

Measure Case

The Measure Case represents an eligible commercial VRF multi-split system covered by AHRI 1230 that incorporates occupancy-based controls for qualifying independently controlled HVAC zones. The occupancy-based control strategy automatically transitions qualifying VRF indoor units or fan coils between occupied operation and temperature setback/setup operation based on real-time zone occupancy conditions.

The Measure Case includes:

- Code-compliant VRF equipment meeting applicable Title 24 minimum efficiency requirements
- Qualifying VRF indoor units or fan coils serving independently controlled HVAC zones
- Occupancy sensing devices serving qualifying spaces or HVAC zones

- Controls integration between occupancy sensors and the VRF controller, thermostat, BAS, EMS, or equivalent control platform
- Occupancy-responsive setback/setup programming and configuration
- Automatic transition between occupied and vacant setback operation based on zone occupancy status
- Functional testing, commissioning, and turnover verification of the occupancy-based control sequence
- Documentation demonstrating that occupancy-responsive HVAC operation is configured, enabled, and operational

This Measure Case reflects the incremental controls, integration, programming, commissioning, and documentation scope needed to implement occupancy-responsive VRF zone conditioning. The measure is intended to reduce unnecessary heating, cooling, and indoor fan energy associated with conditioning intermittently occupied or vacant spaces.

IMC Values and Normalization

For OBC strategies applied to eligible VRF systems, the selected normalization metric for incremental cost is:

\$/ft² of qualifying controlled floor area

Occupancy-responsive VRF controls are primarily controls-integration and operational enablement measures rather than equipment-capacity measures. Incremental costs are driven less by VRF system tonnage and more by the number and distribution of controlled zones, occupancy sensing devices, control points, programming effort, commissioning scope, and turnover verification.

Incremental costs generally scale with:

- Number of qualifying HVAC zones and served spaces
- Occupancy sensor quantity, location, and coverage requirements
- Controls integration between sensors and the VRF controller, thermostat, BAS, EMS, or equivalent platform
- Programming and configuration of occupied, vacant, timeout, and recovery sequences
- Functional testing, commissioning, documentation, startup, and turnover activities

Qualifying controlled floor area is used as the normalization basis because it is readily available from construction documents, aligns with CEDA screening and reporting practices, and provides a practical proxy for zone count and controls complexity. For projects where only a portion of the building receives qualifying occupancy-based VRF controls, the IMC shall apply only to the floor area served by the qualifying controlled VRF zones, not the entire building gross floor area.

Proposed IMC Values

Building/Area Occupancy Type	≤25k ft²	25–100k ft²	100–250k ft²	>250k ft²
Public / Civic (Administrative, Library, Community)	\$0.34/ft ²	\$0.23/ft ²	\$0.15/ft ²	\$0.11/ft ²
Schools¹ (K-12, Higher Education, Daycare)	\$0.30/ft ²	\$0.21/ft ²	\$0.14/ft ²	\$0.11/ft ²
Nonresidential / Commercial (Office, Clinics, Retail)	\$0.33/ft ²	\$0.23/ft ²	\$0.15/ft ²	\$0.11/ft ²
Multifamily Common Areas	\$0.23/ft ²	\$0.16/ft ²	\$0.11/ft ²	\$0.09/ft ²

¹ Excludes classrooms covered under deemed eTRM Measure IDs SWHC012-05 (HVAC Occupancy Sensor, Classroom)

These values reflect:

- Occupancy sensing devices and associated controls hardware
- Controls integration, programming, and occupancy-responsive configuration
- Functional testing, commissioning, and operational verification
- Controls documentation, startup, and turnover activities
- Additional coordination associated with occupancy-responsive VRF zone conditioning strategies

Smaller buildings are expected to experience higher incremental costs per square foot because fixed controls integration, programming, and commissioning costs are distributed across smaller building areas and fewer qualifying HVAC zones. Larger buildings benefit from economies of scale, centralized controls coordination, and greater occupancy diversity across independently controlled HVAC zones.

Sources

IMC values are informed by a combination of publicly available studies, market data, and program experience, including:

- [ET22SWE0023 Final Report](#)
- [BS2019_211335.pdf](#)
- [2022 Energy Code Nonresidential Mechanical](#)
- [Building Commissioning Costs and Savings Across Three Decades and 1,500 North American Buildings | Building Technology and Urban Systems](#)
- [Microsoft Word - Smart Energy Analytics Campaign Year 3 Report_LBNL_11.1.19.docx](#)

Code Readiness Objectives

This measure supports CEDA's Code Readiness efforts by collecting performance, operational, and market data related to OBC strategies applied to VRF systems in commercial and multifamily buildings. While current Title 24 requirements establish minimum programmable setback capabilities and occupancy-based ventilation control pathways for certain HVAC applications, existing occupancy-control frameworks have historically focused on centralized HVAC systems where ventilation, airflow, and space conditioning are tightly coupled.

As distributed and decoupled HVAC system architectures become more common, including VRF systems paired with separate ventilation systems, additional data is needed to better understand the effectiveness of occupancy-responsive zone conditioning strategies that primarily affect sensible heating, cooling, and indoor fan operation at the zone level. This measure seeks to evaluate the operational performance, energy-saving potential, and implementation considerations associated with applying occupancy-based setback control strategies to VRF indoor units serving intermittently occupied spaces.

The objectives of this measure include the following:

- **Evaluate the energy savings potential** associated with occupancy-responsive setback and setup control strategies applied to VRF indoor units and fan coils.
- **Assess the impact of occupancy-based control strategies** on heating, cooling, indoor fan energy use, and peak electrical demand under real-world occupancy conditions.
- **Evaluate the effectiveness of occupancy-responsive zone conditioning strategies in buildings** with intermittently occupied spaces or variable occupancy schedules.
- **Evaluate whether VRF zone-level occupancy signals can be mapped to DOAS** or centralized ventilation control zones to support ventilation reset, reduction, or shutoff when all served spaces are vacant, where permitted by code and documented in the approved sequence of operations.
- **Assess implementation considerations associated with occupancy-based VRF controls**, including occupancy sensor placement, controls integration, commissioning, and operational persistence.
- **Identify operational characteristics, occupancy patterns, and control strategies** that most effectively support occupancy-responsive HVAC operation in zoned VRF applications.
- **Evaluate market readiness, installation complexity, and potential barriers** to adoption associated with occupancy-based controls in VRF systems.
- **Inform future code development, advanced controls strategies, and program design** related to occupancy-responsive HVAC operation in distributed and decoupled HVAC system architectures.

Code Readiness Site Monitoring

If selected for Code Readiness monitoring, equipment energy consumption and mechanical system performance may be monitored on-site for a period of up to 24 months. To support performance evaluation and data collection, projects shall provide reasonable access for the installation and operation of metering, sensors, and communication equipment.

Projects equipped with a Building Automation System (BAS), Energy Management System (EMS), or equivalent platform should enable integration of advanced metering devices through the existing system to facilitate data collection and remote access. For projects without a BAS or EMS, the Code Readiness team may install temporary stand-alone data loggers, sensors, and communication equipment as needed to monitor system performance for the duration of the monitoring period.

Instrumentation may be installed or supplemented, where necessary, to measure key system and equipment parameters sufficient to evaluate system performance and operational characteristics. All monitoring equipment will be temporary and installed in a manner that minimizes disruption to normal building operations.

Data Benefits:

- Operational performance of OBC strategies applied to VRF indoor units and fan coils.
- Heating, cooling, indoor fan energy, and peak demand impacts associated with occupancy-responsive setback and setup control strategies.
- Evaluation of occupancy-responsive HVAC operation in intermittently occupied spaces and buildings with variable occupancy schedules.
- Assessment of occupancy patterns, zone utilization, and operational diversity affecting HVAC energy consumption in zoned VRF systems.
- Evaluation of occupancy sensor placement, vacancy determination logic, setback strategies, and occupancy-based control sequence effectiveness.
- Identification of implementation considerations, commissioning challenges, operational persistence, and controls integration practices associated with occupancy-based VRF control strategies.
- Assessment of market readiness, installation costs, and operational barriers associated with occupancy-responsive controls for VRF systems.
- Development of real-world performance and operational data to support future code readiness evaluation, advanced controls strategies, and program design for occupancy-responsive HVAC operation.

Sample Data Points

A sample set of data points that would ideally be collected is provided below for reference. This list will be re-developed for each project based on the infrastructure and need of the monitoring effort:

Data Points to Meter	Unit	Additional Specifications
Zone Temperature	°F	Average by controlled HVAC zone
Zone Temperature Setpoint	°F	Occupied and vacant setback/setup setpoints
Occupancy State	-	Occupied / vacant signal by controlled zone
VRF Indoor Unit Operating Mode	-	Occupied, setback/setup, heating, cooling, off/standby
VRF Indoor Unit Fan Status	-	On/off or fan speed, where available
HVAC Operating Status	-	e.g., occupied mode, setback mode, recovery mode
DOAS / Ventilation System Operating Status	-	On/off, occupied mode, ventilation mode, or schedule status
Outdoor Airflow or Ventilation Airflow	CFM	Total OA or zone/area-level airflow where available
DOAS Supply Air Temperature	°F	Average supply air temperature serving controlled areas

Code Reference

The following codes, standards, and technical references establish the regulatory and technical framework for this HPM. Current California Title 24 requirements define applicable space-conditioning equipment efficiency, thermostat control, setback/setup, and ventilation requirements that qualifying VRF systems must meet. This HPM builds on those baseline requirements by applying real-time occupancy input to VRF indoor units or fan coils serving independently controlled HVAC zones, while maintaining required ventilation, safety controls, humidity protection, freeze protection, and manufacturer-required equipment protection functions.

Relevant references include Title 24, Part 6 HVAC equipment and control requirements, VRF equipment rating standards, and supporting industry guidance for occupancy sensing, thermostat controls, BAS/EMS integration, and occupancy-responsive HVAC operation.

Applicable Codes and Standards

CODE	APPLICABLE CODE REFERENCE	EFFECTIVE DATE	CODE REVIEW DATE
CA Building Energy Efficiency Standards - Title 24, Part 6	§110.2(c)1; §120.2(a); §120.2(b); §120.2(e); §120.1(d)5.C; §120.2(e)3; Table 110.2-F; Table 110.2-G	January 1, 2026	May 2026
AHRI Standard 1230	AHRI 1230	January 2024	May 2026

Eligible Climate Zones and Building Types

Eligible Climate Zones

This high-performance measure applies statewide in **California Climate Zones 1–16**, as defined by Title 24. Applicants must identify the project climate zone in the project submittal.

Eligible Building Types

This high-performance measure applies to **public, nonresidential, and high-rise multifamily common areas** that utilize VRF systems serving independently controlled HVAC zones. Eligible applications are those where occupancy-responsive setback/setup controls can reduce unnecessary zone conditioning during periods of vacancy.

Eligible applications may include, but are not limited to:

- Office buildings and tenant office spaces
- Educational facilities and classrooms
- Conference rooms, meeting spaces, and training rooms
- High-rise multifamily common areas and amenity spaces
- Hotel and hospitality common areas
- Retail tenant spaces and small commercial spaces
- Administrative buildings and municipal facilities
- Other commercial or high-rise multifamily common-area spaces with intermittently occupied zones or variable occupancy schedules

Eligibility is limited to VRF indoor units or fan coils serving qualifying HVAC zones where occupancy-based controls can automatically transition the associated zone equipment between occupied operation and setback/setup operation based on real-time zone occupancy conditions.

Eligible Project Scopes

This high-performance measure applies to **new construction, additions, and major alterations** or retrofit projects that install qualifying occupancy-based controls for VRF systems serving independently controlled HVAC zones.

Eligible project scopes may include, but are not limited to:

- **New construction** projects installing qualifying VRF systems with occupancy-based setback/setup control strategies
- **Building additions** that include new VRF indoor units or fan coils with qualifying occupancy-based controls
- **Major alterations** that replace or substantially modify existing VRF controls to incorporate occupancy-responsive setback/setup operation
- **Program-eligible tenant improvements** or space reconfigurations that implement qualifying occupancy-based controls for newly installed VRF zones
- Projects that install occupancy-responsive setback/setup controls for qualifying VRF indoor units serving intermittently occupied spaces or independently controlled HVAC zones

This high-performance measure does not apply to minor repairs, maintenance-only work, like-for-like thermostat replacements without qualifying occupancy-based control functionality, or projects where occupancy-responsive setback/setup operation is not fully configured and enabled for the qualifying HVAC zones.

Measure Exclusions

This high-performance measure does not apply to:

- **HVAC systems that do not utilize VRF technology** or do not provide independently controlled HVAC zones.
- **Centralized HVAC systems, packaged rooftop units, single-zone systems, or other non-VRF HVAC systems** where VRF indoor units or fan coils are not the qualifying controlled equipment.
- **Projects that rely solely on schedule-based programmable thermostat setback/setup strategies** without real-time occupancy-responsive control functionality.
- **Occupancy sensors installed only for lighting control, security, or plug-load control** unless the occupancy signal is also integrated with the qualifying VRF control sequence.
- **Occupancy-based control features that are available as unused equipment capability** but are not fully configured, commissioned, enabled, and operational at project turnover.
- **Projects where occupancy-responsive setback/setup operation** would disable, override, or conflict with required ventilation, safety controls, freeze protection, humidity protection, or manufacturer-required equipment protection functions.
- **Like-for-like thermostat or controls replacements** that do not add qualifying occupancy-responsive setback/setup functionality for the associated VRF indoor unit or fan coil.
- **Projects receiving incentives through an existing deemed measure or other incentive pathway** for equivalent occupancy-based HVAC control functionality, including applicable eTRM measures such as SWHC012-05, HVAC Occupancy Sensor, Classroom, and SWHC062-02, Occupancy Fan Controller, Commercial.

Reviewer Checklist

HPM Review Checklist: LM401 – VRF Systems with Occupancy-Based Controls – V1.2

Checklist Description: This checklist captures the elements that must be present in the project design to be eligible for the high-performance measure inducement or consideration for additional site metering.

Project Name: _____ **Review Date:** _____

Assessment: _____ **Notes:** _____

- Approved
- Not approved

Reviewer: _____ **Signature:** _____

High-Performance Measure Requirements	Comments
<input type="checkbox"/> VRF eligibility verified: Qualifying equipment is documented as commercial VRF multi-split equipment covered by AHRI 1230 and is not a mini-split or multi-zone heat pump system rated only under AHRI 210/240.	
<input type="checkbox"/> Qualifying zones identified: Construction drawings or controls documentation identify the qualifying VRF indoor units or fan coils and the independently controlled HVAC zones they serve.	
<input type="checkbox"/> Zone-level control confirmed: Each qualifying HVAC zone has independent temperature control and documented occupied and vacant setback/setup setpoints.	
<input type="checkbox"/> Real-time occupancy input provided: Occupancy sensors are installed for each qualifying controlled zone or served space and are located/configured to detect normal occupant activity.	
<input type="checkbox"/> OBC-to-VRF integration verified: Occupancy signals are integrated with the VRF controller, thermostat, BAS, EMS, or equivalent platform so that vacancy directly initiates setback/setup operation.	
<input type="checkbox"/> Sequence of operations documented: The OBC sequence identifies occupied setpoints, vacant setback/setup setpoints, vacancy timeout period, and automatic recovery/re-occupancy sequence.	
<input type="checkbox"/> Schedule-only control excluded: The project uses real-time occupancy input and does not rely solely on time-of-day scheduling or standard programmable thermostat setback.	
<input type="checkbox"/> Startup/commissioning verified: The occupancy-based setback/setup function is configured, enabled, functionally tested, and operational at project turnover.	
<input type="checkbox"/> Required protections maintained: OBC operation does not disable required ventilation, safety controls, freeze protection, humidity protection, condensate protection, or manufacturer-required equipment protection functions.	
<input type="checkbox"/> Ventilation coordination documented, if applicable: If occupancy-based ventilation reset, reduction, or shutoff is included, the sequence identifies the controlled ventilation zone, associated VRF zones/spaces, vacancy logic, and safeguards for maintaining code-required ventilation.	

Supporting Documentation Requirements for Inducement**Comments**

- Were engineered, stamped, and permitted construction drawings provided that identify the qualifying VRF system, controlled HVAC zones, occupancy sensor locations, and OBC scope?
- Was a sequence of operations provided that describes the occupancy-based control strategy, including occupied setpoints, vacant setback/setup setpoints, vacancy timeout period, and automatic recovery sequence?
- Were equipment submittals and manufacturer specifications provided for the qualifying VRF equipment, occupancy sensors, and associated control devices?
- Was documentation provided demonstrating that the OBC functionality has been configured, enabled, and verified as operational for the qualifying HVAC zones?
- Was equipment-cost information provided for the occupancy-based control scope, including applicable sensors, controls hardware, integration, programming, commissioning, and verification costs?
- Where occupancy-based ventilation reset, reduction, or shutoff is included, was a ventilation control sequence provided identifying the controlled ventilation zone, associated VRF zones or spaces, vacancy determination logic, and safeguards for maintaining code-required ventilation?

Code Readiness Site Metering Prerequisite**Comments**

- Did the project install a Building Automation System (BAS), Energy Management System (EMS), or similar building management system so that advanced metering devices can be installed?

Version History Log

Version	Effective Date	End Date	Change Description
1	June 26, 2024	May 24, 2026	N/A
1.2	May 25, 2026	Current	Updated to current CEDA HPM format, with revised eligibility, IMC, and reviewer checklist