# TECHNICAL SPECIFICATIONS

# FOR

# REPLACE HVAC CONTROLS, SITE

***Located at***

AIR FORCE RESEARCH LABORATORY
ROME RESEARCH SITE
ROME, NEW YORK 13441

**PROJECT NR**: ULDF22-0002 **DATED**: 10 APR 2026

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**SECTION 15001**

**GENERAL PROVISIONS**

## PART 1 – GENERAL

### 1.01 SCOPE OF WORK

A. Furnish and install equipment and materials required to provide complete temperature control system alterations.

B. Generally, the work includes:

1. Removal and replacement of existing control devices. Re-use of existing actuating devices and compatible sensors is acceptable. Verify operation of reused existing devices and replace non-functional devices as necessary.

2. Programming of application specific devices and other field controllers including verification of programming functionality.

3. Initial set-up of new supervisory control devices to current revision level of existing, similar devices on site. Database programming and graphical representations will be accomplished by AFRL personnel due to network security protocols.

C. Refer [also] to TC drawings and Specification Appendix – Existing Control System (Trane) as-built documentation for pertinent work as applicable. Note mark-ups in Trane documentation denoting points that are no longer needed.

### 1.02 REFERENCED CODES AND STANDARDS

A. Codes and standards referred to in this specification shall be the latest adopted issue at the Date of Bid, unless otherwise specifically indicated.

### 1.03 LOCATION

A. The work areas are located in Bldg. 2, Bldg. 3, and Bldg. 106 at Rome Research Site, Rome, New York.

### 1.04 UTILITIES

A. All reasonable quantities of electricity and water will be made available to the Contractor without cost to the Contractor. The Contractor will be responsible for all connections of utilities from the existing supply points. The Government will identify service tie-in points. The Government will not be held responsible for interruptions of utility service and will not be liable for Contractor delays, damages, or increased costs occasioned by any such interruption of service.

### 1.05 SANITARY FACILITIES

A. The Contractor and his work force may use the existing sanitary facilities in the various work area buildings, subject to the regulations governing their use by Government personnel. Maintain in a sanitary condition at all times.

## 1.06 FIRE PROTECTION

A. The Contractor shall perform all work in a fire-safe manner in accordance with fire prevention standards of the Rome Research Site. The Contractor shall have an approved fire extinguisher at the site at all times during working operations. HALON AND CO2 TYPE FIRE EXTINGUISHERS ARE NOT AUTHORIZED FOR USE. The Contractor will call the contracting officer, before working with any flame or spark producing equipment such as tar buckets, grinders, or welders, for approval of the contractors safety measures and to obtain a "Burn Permit" for this type of work.

## 1.07 POLLUTION CONTROL

A. The Contractor will perform all work consistent with the requirements of all Federal, State and Local laws, rules and regulations pertaining to pollution control.

## 1.08 WORK CONDITIONS

A. All work on this project will be performed while the building work areas and rooms adjacent to the work areas are occupied by military and civilian personnel. The Contractor is required to protect persons and property throughout the progress of the work. The work area will be kept clean of all debris at all times. All flammables and combustibles stored on-site must be kept in a locker and area, both of which are approved by the Contracting Officer or his designated representative.

## 1.09 WORKMANSHIP

A. All work to be performed under this Contract shall be under the superv1s1on of workmen skilled in the trades involved. Special qualifications for certain work are listed in the appropriate sections of this specification.

## 1.10 WORKING HOURS

A. The regular hours of work on the Rome Research Site are from 0700 to 1600 hours, Monday through Friday, excluding Federal holidays. The government may restrict access to work sites to these hours and days. The contractor shall consider all other hours as non-regular time and use the appropriate unit prices for tasks performed during those hours.

## 1.11 MANUFACTURER'S SAFETY DATA SHEETS (MSDS)

A. Provide a bound, indexed assembly of pertinent equipment and materials (including applicable Subcontractor items).

## 1.12 FABRICATION DRAWINGS, MATERIAL LISTS AND EQUIPMENT SUBMITTALS

A. Prior to installation, submit fabrication drawings, material lists and equipment submittals (shop drawings) for approval in accordance with the following:

1. It is the intent of these specifications to define the requirements for fabrication drawings, material lists and equipment submittals. Questions regarding these requirements shall be directed to the Contracting Officer prior to submission.

2. Fabrication drawings and material lists shall conform to the requirements herein specified.

3. Equipment submittals, unless otherwise specified, shall conform to the following:

    a. Submittals shall be complete with the manufacturer's product description literature. SUBMITTALS WITH INSUFFICIENT LITERATURE WILL BE DISAPPROVED.

    b. Submittals shall include a complete listing of associated parameters contained in the bidding documents (materials, finishes, capacities, temperatures, pressures, electrical characteristics, etc.). THE ENGINEER WILL NOT TRANSFER INFORMATION FROM THE BIDDING DOCUMENTS TO THE SUBMITTALS. INCOMPLETE SUBMITTALS WILL BE DISAPPROVED.

    c. Submittals shall be clearly marked to differentiate between the applicable and extraneous portions. THE ENGINEER WILL NOT MARK THE SUBMITTALS. UNMARKED SUBMITTALS WILL BE DISAPPROVED.

    d. The attached Submittal Cover Sheet (AF Form 3000) shall be copied, filled out and attached to EACH item submitted.

4. SUBMITTALS (INCLUDING RE-SUBMISSIONS), PREPARED AND TRANSMITTED IN ELECTRONIC FORMAT, SHALL BE ACCOMPANIED WITH A HARD COPY COMPRISED OF ORIGINAL, PRINTED PRODUCT LITERATURE (PHOTOCOPIES ARE NOT ACCEPTABLE).

5. ADDITIONALLY, ELECTRONIC SUBMITTALS WHICH DO NOT CONFORM WITH THE ABOVE REQUIREMENTS WILL NOT BE REVIEWED, BUT RATHER DELETED WITH A CORRESPONDING TRANSMISSION: "REJECTED, NON-COMPLIANT SUBMISSION!"

6. Unless otherwise noted or herein specified, the following are required:

    a. Fabrication drawings:

        1) Control system layouts including applicable wiring diagrams.

    b. Equipment submittals:

        1) Supervisory controllers.

        2) Secondary bus controllers.

        3) Temperature sensors.

        4) Pressure sensors.

        5) Humidity sensors.

        6) Damper actuators.

        7) Valve actuators.

8) Controller enclosures.

9) Relays.

10) Transformers.

## 1.13 INTERRUPTION OF UTILITIES

A. No utility services shall be interrupted to make connections, to relocate, or for any purpose, without approval of the Contracting Officer.

B. Request for permission to shut down services shall be submitted in writing to the Contracting Officer fourteen (14) days prior to date of proposed interruption. The request shall give the following information:

1. Location of shut-off.

2. Services affected.

3. Hours and date of shut-off

4. Approximate length of time shut-off will be in effect.

C. Services shall not be interrupted until receipt of approval of the proposed hours and date from the Contracting Officer.

## 1.14 SECURITY REQUIREMENTS

A. The work to be done on this project is located within areas that are under security. To gain access to the areas to examine the work to be done for estimating purposes, arrangements must be made with the Contracting Officer. Contractor personnel will be granted escorted entry into the areas. Prior to initial work commencement, the Contractor shall supply the Contracting Officer a letter identifying all personnel employed during construction. Each time additions or deletions to the letter occur, an updated letter shall be forwarded to the Contracting Officer. Identification data shall include name, social security account number and company name/phone number of each person.

B. All buildings in the project are Controlled Areas and Contractor personnel shall stay in their work areas and not wander freely throughout the buildings. Names of the Contractor personnel who will be working during non-duty hours shall be furnished in writing at least one week in advance. Access to Rome Research Site (RRS) facilities is controlled by a card entry system. Contractor personnel shall be required to obtain magnetic entry cards for all personnel who will be involved in the work and who need to have access to the building. The magnetic entry cards can be obtained from the RRS Security Office, AFRL/RIOF, in Building 3. These cards shall be returned to the Contracting Officer's Technical Representative before completion of the final inspection.

## 1.15 DELIVERY AND STORAGE

A. Materials shall be delivered to the work area in undamaged condition, stored in fully covered, well ventilated areas, and protected from extreme changes in humidity and temperature.

B. The Contractor is responsible for securing materials in the storage area to protect from pilferage and vandalism.

C. The storage areas for this project are located as shown on the Drawing Title Sheet. Access to these work areas is provided off main routes within the Griffiss Business and Technology Park Complex.

## 1.16 SAFETY

A. The Contractor shall:

1. Comply with all safety and health requirements necessary for the protection of personnel, facilities and equipment including, but not limited to all applicable Occupational Safety and Health Administration (OSHA) standards, while performing this contract at the Air Force Research Laboratory (AFRL), Rome Research Site (RRS) in Rome, NY.

2. Maintain a written Safety Program, as required by OSHA and make said plan available for review by the government upon request by the contracting officer.

3. In the event of a mishap during the performance of this contract on AFRL RRS premise, notify the contracting officer in an expeditious manner. Notification shall include the following information:

a. Contract, contract number, name and title of person(s) reporting.

b. Date, time and exact location of accident/incident.

c. Brief narrative of accident/incident (events leading to accident/incident).

d. Cause of accident/incident (if known).

e. Type of injury sustained and/or estimated cost of accident/incident (material and labor to replace/repair) when damage is to government property.

f. Nomenclature of equipment and personnel involved in accident/incident.

g. Corrective actions (taken or proposed).

h. Other pertinent information.

## 1.17 PROPRIETARY EQUIPMENT

A. Reference to any equipment, material, article or patented process by trade name, mark or catalog number shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may use any equipment, material article or process which is equal to that named as approved by the Contracting Officer.

## 1.18 PROTECTION

A. Protection of existing work:

1. The Contractor shall take all necessary precautions to insure against damage to the existing work to remain in place, to be reused, or to remain the property of the Government; i.e. walls, light fixtures, carpet, etc.

2. The Contractor shall insure that structural elements are not overloaded and additional structural supports required as a result of any cutting, removal, or demolition work performed under any part of this Contract are added.

B. Protection of buildings from the weather:

1. The interior of the building and all materials and equipment shall be protected from the weather at all times.

C. Dust Control:

1. The amount of dust resulting from demolition shall be controlled to prevent the spread of dust to occupied portions of the building and to avoid creation of a nuisance in the surrounding areas.

D. Temporary closures:

1. The Contractor shall provide temporary closures at all openings in outside walls affected by their work to maintain weather protection and security.

E. Protection of personnel:

1. Where the safety of non-Contractor personnel is endangered in the area of removal work and new construction, barricades shall be used.

## 1.19 REMOVED MATERIALS AND EQUIPMENT

A. General:

1. All materials and equipment indicated to be removed as part of the work become the property of the Contractor for removal from the job site at the Contractor's expense, unless otherwise shown on the drawings or specified.

B. Items re-used as part of the work:

1. Items indicated to be re-used will be stored by the Contractor until such time as they may be reinstalled.

## 1.20 DISPOSAL OF REMOVED MATERIALS

A. General:

1. Materials removed from the project which are designated as unusable by the Government shall be disposed of by the Contractor at his own expense off the Griffiss Business and Technology Park in accordance with applicable regulations.

2. All debris to be removed from the work site shall be transported in canvas covered trucks with the canvas tied down to prevent loss of materials while in route to the disposal areas.

3. The Contractor shall police the truck routes continuously and all debris which has dropped shall be picked up immediately.

B. Materials for Contractor salvage:

1. This material shall be removed from Government property before completion of the Contract.

2. Materials for salvage shall not be sold on the site.

C. Special considerations must be made for any light bulbs and ballasts removed during the project. RIOCV will provide large boxes and protective material (i.e. bubble wrap), for the contractor to place the old light bulbs in. The contractor shall not dispose of these light bulbs; RIOCV must dispose of them in accordance with "Universal Waste" regulations.

D. In addition, the contractor shall not dispose of any light ballasts removed during this project. The contractor should stage the ballasts for processing and disposal by RIOCV.

E. RIOCV shall also be notified/consulted if the contractor encounters or generates any hazardous (or potentially hazardous) waste(s).

## 1.21 REMOVAL AREAS

A. Patch existing construction and finishes damaged or left incomplete due to removals. Patching, unless otherwise indicated, will be limited to areas where removals occurred and will match existing in material, color and finish.

B. Cap or otherwise terminate existing utility services to removed equipment on all utilities that are to remain active.

## 1.22 SPECIAL CONDITIONS

A. Should any materials be encountered during construction which are suspected to contain hazardous materials and are not indicated as such on the drawings, immediately stop work in that area and report the encountered condition to the Contracting Officer's Technical Representative.

## 1.23 SEQUENCING AND SCHEDULING

A. Provisions must be made to leave each entrance secured at the end of work each day and to minimize the duration of time each entrance is worked on from start to completion. Any work which affects the use of a required building exit must be coordinated with the Rome Research Site Safety Office.

B. The Contractor is required to maintain circulation corridors, exits and exit stairs in all building areas occupied by the Government.

C. Traffic control:

1. Routes of ingress and egress on the grounds and within existing buildings to the location of the work shall be over routes as directed by the Government.

2. Areas for parking vehicles belonging to the Contractor and his employees will be designated by the Contracting Officer's Technical Representative. Maintain the parking areas free of debris and obstructions, including snow.

## 1.24 WORK SCHEDULE

A. Working hours for the Contractor will normally be between the hours of 0700 and 1600 hours (7:00 a.m. and 4:00 p.m.), excluding Saturdays, Sundays and Federal holidays.

B. If the Contractor desires to work during periods other than above, additional government inspection forces may be required:

1. The Contractor must make his/her request to the Contracting Officer three (3) days in advance of his/her intention to work during other periods to allow assignment of additional inspection forces.

2. If such force is reasonably available, the Contracting Officer may authorize the Contractor to perform work during periods other than normal duty hours/days.

3. However, if inspectors are required to perform in excess of their normal duty hours/days solely for the benefit of the Contractor, the actual cost of inspection at overtime rates will be charged to the Contractor. These adjustments to the Contract Price may be made periodically as directed by the Contracting Officer.

# PART 2 - PRODUCTS

## 2.01 ACCEPTABLE MANUFACTURERS

A. Materials and equipment shall be in strict accordance with the parameters herein specified.

## 2.02 ACCESSORIES AND COMPONENTS

A. Systems and equipment shall be complete with the necessary quantity of accessories and components required to insure a properly functioning installation.

# PART 3 - EXECUTION

## 3.01 INSTALLATION

A. Work shall be expeditiously executed in a well-planned, organized, neat, workmanship like manner.

B. Unless otherwise noted or herein specified, materials and equipment shall be installed in strict accordance with the manufacturer’s recommendations.

C. System components shall be installed in a fashion ensuring easy serviceability.

D. Electrical work herein specified and/or noted shall be executed in strict conformance with the National Electrical Code (NEC).

## 3.02 SUPPORTS

A. Provide auxiliary steel (beams, channels, angles, formed shapes, etc.) required to properly support equipment and distribution systems.

B. Utilize galvanized components (wherever practical) or field apply two coats of corrosion resistant primer.

C. Seismic anchorages, restraints and equipment supports shall comply with National Uniform Seismic Installation Guidelines.

## 3.03 FINAL CLEANING, EQUIPMENT ROOMS

A. Remove trash and debris.

B. Thoroughly sweep (using sweeping compound) and subsequently vacuum floors.

C. Hand wash wall surfaces and equipment and remove any foreign substance (adhesive, extraneous paint, droppings, etc.).

D. Damp-mop floors.

## 3.04 RECORD DRAWINGS

A. Promptly record (in a neat, legible and red-color only accentuated fashion, on a complete, designated set of bidding documents containing no other markings) significant differences reflected by the actual installation (sizes, capacities, locations and features of distribution systems and equipment).

B. Thoroughly review such recordings weekly with the Engineer's field representative and submit the completed set to the Engineer for electronic formatting.

## 3.05 FIELD CHECKING START-UP

A. Provide field checking start-up for systems and equipment in accordance with the requirements herein specified.

## 3.06 SYSTEMS CHECK-OUT (COMMISSIONING)

A. Subsequent to completing the HVAC systems, the Temperature Controls Contractor, in conjunction with the Contracting Officer's representative, shall orchestrate a demonstrative "check-out" of the systems operation.

B. The above assembly, under the conjunctive direction of the Temperature Control Contractor's project manager and the Contracting Officer's representative shall demonstrate the disposition of the system(s) sequence of operation relative to the proper response of related equipment, controlled devices, controllers and balancing influences.

C. Shortcomings shall be defined and assigned (verbally and confirmed in writing) to the appropriate participant(s) relative to required corrective measures, including an appropriate date for completion.

D. Thereafter, the above process will be repeated until all the requirements set forth in the bidding documents are properly satisfied.

E. Finally, submit a detailed report to the Contracting Officer's representative, summarizing corrective measures and/or implemented alterations.

## 3.07 INSTRUCTION

A. Provide thorough, organized instruction regarding equipment and systems operation to the Owner's authorized representatives (secure written acknowledgement and forward to the Contracting Officer's representative); refer to respective specification sections for designated requirements.

## 3.08 OPERATION AND MAINTENANCE MANUAL

A. Upon completing the material lists and equipment submittal process, submit two bound, neatly arranged, indexed Operation and Maintenance Manuals for approval.

B. Manuals shall be contained in heavy duty, 3-ring vinyl covered loose-leaf binders (suitable sets of MANAGEABLE SIZE, like equipment and systems grouped) complete with:

1. Typewritten description of contents within a clear plastic sleeve on the spine.

2. Dividers with labeled, celluloid covered tabs.

3. Protective plastic jacket enclosures for diagnostic software.

C. Manuals shall contain:

5. Title page delineating:

a. Name of project.

b. General nature of contents.

c. Name and address of Contractor.

d. Applicable cross-references to related volumes.

2. Table of contents listing equipment (including the associated alphanumerical designation) and the corresponding section (tab).

3. Pertinent equipment information, including:

a. Manufacturer and serial number.

b. Approved submittal.

c. Operating and maintenance instructions.

d. Names, addresses and telephone numbers relative to parts and service.

4. Field checking start-up reports.

5. Systems check-out (commissioning) reports.

**END OF SECTION**

Attachment: Submittal Cover Sheet

# MATERIAL APPROVAL SUBMITTAL

*(See Instructions on Reverse)*

*Form Approved*
*OMB No 9000-0062*
*Expires May 31, 2005*

Public reporting burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to the Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project OMB No 9000-0062, Washington DC 20503. Please DO NOT RETURN your form to either of these addresses. Send your completed form to: SAF/AQCP, 1060 Air Force Pentagon, Washington DC 20330-1060.

| **TO:** *(Contracting Officer)* | **FROM:** *(Contractor)* | DATE *(YYYYMMDD)* |
|---|---|---|
| CONTRACT NUMBER | SUBMISSION NUMBER | SUBMITTAL ☐ NEW ☐ RESUBMITTAL |
| PREVIOUS SUBMISSION NUMBER | PROJECT NUMBER | |

| **TO BE COMPLETED BY CONTRACTOR** | | | **FOR GOVERNMENT USE ONLY** | | | |
|---|---|---|---|---|---|---|
| ITEM NO. | SPECIFICATION SECTION/ PARA NO./DRAWING NO. | DESCRIPTION OF MATERIAL *(Include Type, Model Number, Catalog Number, Mfg., etc.)* | AP-PROVED | DISAP-PROVED | SEE REVERSE | INITIAL |
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**BY COMPLETING THIS FORM, THE UNDERSIGNED CONTRACTOR CERTIFIES THAT THE MATERIAL COMPLIES WITH ALL SPECIFICATIONS OF SUBJECT CONTRACT.**

| DATE *(YYYYMMDD)* | TYPE OR PRINT NAME AND TITLE | SIGNATURE |
|---|---|---|
| | | |

**FOR GOVERNMENT USE ONLY**

**TO:** *(Base Civil Engineering Officer)*

**For Evaluation and Action**

| DATE *(YYYYMMDD)* | TYPE OR PRINT NAME AND GRADE | SIGNATURE |
|---|---|---|
| | | |

**TO:** *(AF Contracting Office)*

**RECOMMEND** ☐ APPROVAL ☐ DISAPPROVAL AS INDICATED ABOVE AND SUBJECT TO ANY APPLICABLE COMMENTS ON THE REVERSE

| DATE *(YYYYMMDD)* | TYPE OR PRINT NAME AND GRADE | SIGNATURE |
|---|---|---|
| | | |

**TO:** *(Contractor)*

☐ APPROVED ☐ DISAPROVED AS INDICATED ABOVE AND SUBJECT TO ANY APPLICABLE COMMENTS ON THE REVERSE SIDE. REQUEST RESUBMITTAL ON DISAPPROVED ITEMS WITHIN _____ DAYS OF DATE SHOWN BELOW.

| DATE *(YYYYMMDD)* | TYPE OR PRINT NAME AND GRADE | SIGNATURE |
|---|---|---|
| | | |

**COMMENTS**

***(Number to correspond with applicable Item Number on reverse)***

**INSTRUCTIONS TO CONTRACTORS**

*1. The term "material" is defined as articles, supplies, raw materials, equipment, parts, components, and end items that are to be incorporated into the work required by the contract.*

*2. This form is to be used by contractors for submitting Shop Drawings, Equipment Data, Manufacturer's Literature and Certificates and samples of Materials to the Government for approval in accordance with the provisions of this contract. Unless otherwise specified, it is to be prepared in 4 copies, signed, and provided to the contracting officer with appropriate attachments.*

*3. Item(s) to be approved will be clearly tabbed or identified. Data pertaining to item(s) to be approved will be clearly identified or tabbed, particularly where documents are voluminous, in order to properly evaluate the materials or articles to be incorporated in the work. Each attachment will be numbered to correspond with the item number shown on the face of this form.*

*4. Requests submitted shall be numbered consecutively, by contract, in the space entitled "Submission No.". This number, in addition to the Contract No., will be used to identify each Material Approval Submittal. Resubmissions will be indicated in the appropriate block and the insertion of previous submission number and data in addition to a new submission number. A single submission should be used for all work of a section of the specifications, but in NO instance should the submission include work for more than one (1) contract. Submittals requiring priority handling will be submitted by separate submittal using the form and so marked across the face of the form.*

*5. This Material Approval Submittal is not valid unless it is signed by the contracting officer. This approval is required as called for by the contracting officer under the terms of this contract.*

# SECTION 15570

# AUTOMATIC TEMPERATURE CONTROLS

## PART 1 – GENERAL

### 1.01 REQUIREMENTS

A. Furnish and install complete automatic temperature control systems as shown on the drawings and herein specified.

B. The control system for this project is an extension of the existing Johnson Controls Metasys system. All control components shall be compatible with the existing system and all control functions shall be thru the existing control system.

B. System shall be the distributed-processing, direct digital control (DDC), type; compatible for networking with the Owner's existing single point programming and information sharing building management system (BMS); CAPABLE OF MULTI-SITE INTERFACE VIA PASSWORD SECURED INTERNET, AND OWNER NETWORK ACCESS; complete with programmable control modules, specific function control modules, software, dampers, valves, actuators, sensors, ancillary controllers, relays, switches, start-up service and all necessary accessories required to accomplish the sequences herein specified; additionally, system shall be a seamless extension of the existing with the capability to provide:

1. Communication with the existing Application and Data Servers, Operator Workstations, and Portable Operator Terminals.

2. Controller programming and upload/download functions for new controllers through existing Data Servers, Operator Workstations, and Portable operator terminals.

3. Database archiving.

4. System software features including:

    a. Adjustment and override of system parameters.

    b. Scheduling and reporting functions.

    c. Historical trending and data collection.

    d. Alarm annunciation including paging and e-mail notification.

    e. Peer-to-peer communications between new and existing controllers.

C. FAILURE TO COMPLY WITH THE ABOVE REQUIRES THE COMPLETE REPLACEMENT OF THE EXISTING SYSTEM (DUAL OR HYBRID/INTEGRATED SYSTEMS ARE NOT ACCEPTABLE).

D. The scope of work includes all systems/equipment/terminals shown on the drawings (both existing to remain and new) in context with the sequences hereinafter described.

E. Existing controlled devices and their associated actuators may be reused unless they are unsatisfactory for continued service; in which case, they shall be repaired or replaced as appropriate.

## 1.02 SUBMITTALS

A. ALL REFERENCES TO EQUIPMENT, CONTROLLERS, CONTROLLED DEVICES, ETC. **SHALL MATCH EXACTLY** THE TITLES AND ALPHANUMERIC DESIGNATIONS SHOWN IN THE BIDDING DOCUMENTS.

B. THE SEQUENCES OF OPERATION (EXCEPT FOR THE INSERTION OF REFERENCES TO SPECIFIC DEVICES) **SHALL MATCH PRECISELY THE VERNACULAR OF THIS SPECIFICATION**; UPON REQUEST, THE ENGINEER WILL PROVIDE DIGITAL FILES.

C. THE SYSTEMS SCHEMATICS CONFIGURATION **SHALL MATCH EXACTLY** THOSE SHOWN IN THE BIDDING DOCUMENTS; UPON REQUEST, THE ENGINEER WILL PROVIDE DIGITAL FILES.

## 1.03 GUARANTEE

A. The system shall be guaranteed to be free from defects in materials and workmanship for a period of 2 years from the date of final acceptance by the Owner, during which time all above mentioned defects shall be corrected and all services incidental to proper performance shall be provided free of charge.

## 1.04 START-UP

A. System start-up shall include the provision of initial programming, setting, testing and checking and all subsequent programming modifications and adjustments required to insure proper operation.

B. Seasonal related influences for heating and cooling shall be appropriately phased.

## 1.05 INSTRUCTIONS

A. Instructions for system operation (as required and/or requested throughout the guarantee period by the Owner's authorized representative) shall consist of 1, 4-hour session requiring written acknowledgement (refer to "Owner Instruction Log", attached).

# PART 2 – PRODUCTS

## 2.01 DESCRIPTION

1) Programmable control modules (PCM):

    1. General:

        a. Stand-alone, microprocessor based.

        b. Modular (allowing point expansion).

c. Direct digital control (DDC) algorithms (2-position, incremental, proportional, proportional plus integral, proportional plus integral plus derivative) programmed in a fashion properly complementary with the sequences herein specified.

d. Field programmable (local or from master station. Programming software shall be supplied for installation on existing customer laptop computer (Windows 7) and existing customer primary client workstation (Windows 10)).

2. Input:

a. Analog:

1) 12 bit resolution, common sensing device(s) compatible.

b. Binary:

1) Supervised, common sensing device(s) compatible.

3. Output:

a. Analog:

1) 0 to 10 VDC or 4 to 20 milliamperes.

2) Designated (individual) for each controlled device.

b. Binary:

1) Continuous low voltage signal, normally open or normally closed, 3-position manual override ("On/Off/Auto") as required.

4. Alarms (audio and visual; local and master station annunciation):

a. Program failure.

b. Card failure.

c. Sensor failure.

d. Other (as herein specified).

5. Power loss protection:

a. Battery backup (RAM), 24 hours.

b. Automatic diagnostic resumption (prior to battery failure) following commercial power restoration.

c. Manual restoration (subsequent to battery failure) from mass storage.

6. Integral (local) display:

a. Monitored points.

b. Alarms.

c. Setpoint adjustment.

7. Enclosure:

a. Steel, Underwriters Laboratories listed; key lock, piano hinged, full access door; baked enamel finish.

b. Arranged to permit timely (construction phased), internal termination of all associated wiring.

2) Specific function control modules (SFCM):

1. Units shall conform with the parameters outlined for programmable control modules, except that the memory shall be permanent and unaffected by loss of commercial power.

2. Units shall be employed as designated (never as a substitute for PCM's).

3) Master station software:

1. Anti-recycle protection:

a. Designated programmable timers (0 to 120 minutes).

2. User access:

a. Multiple level, password secured; recorded log "On"/log "Off".

b. Prompted, menu driven, English language communication; contiguous, help key actuated, instruction display.

c. Provide owner with current version of all necessary programming software tools to revise applications in all provided local control units. Programming tools shall have the capability to connect remotely to local control units throughout the system from existing Building Management System (BMS) operator workstations.

3. Time-of-day scheduling:

a. Individually editable 8-day (7 plus holiday; 6 events per day) master schedules.

4. Features:

a. Custom control language, optimum start/stop, after hours override, run time and maintenance messages.

5. Trend log(s):

a. General:

1) Capacity to address all inputs, outputs and calculated values.

2) Retrievable in file format or graphical display.

b. Initial requirements:

1) Thermal demand:

a) CHW systems.

b) HW heating systems.

2) Thermal energy consumed:

a) CHW systems.

b) HW heating systems.

3) Electrical demand:

a) CHW generators.

b) CHW system ancillaries.

c) Service entrance.

4) Electrical energy consumed:

a) Central station air handling system(s) fans.

b) CHW generators.

c) CHW system ancillaries.

d) Service entrance.

4) Diagnostics:

1. Basic operation:

a. Self-testing; automatic storage; user notification via printer, audible tone and flashing display.

2. Troubleshooting guides:

a. Symptom/diagnosis displays (for PCM's and SFCM's).

5) Automatic dampers:

1. Low leakage type (parallel blade for mixing service and opposed blade for volume/throttling service).

2. 16 gauge galvanized steel roll-formed blades, 13 gauge galvanized steel roll-formed frame, zinc plated hardware, interlocking blade edges with

inflatable closed cell neoprene seal, friction type spring-loaded stainless steel blade ends with zero clearance.

3. Spring return (unless physical limitations are incompatible).

6) Automatic control valves:

1. General:

a. Complementary with all parameters (temperature, pressure, medium, etc.) related to the associated piping system.

b. Spring return (unless physical limitations are incompatible).

2. Steam, 2-way, proportional:

a. Globe pattern, single-seated, modified linear characteristics (unless otherwise noted or specified), renewable trim.

b. Adjustable start point and operating range as required.

3. Hydronic, 2-way, proportional:

a. Ball pattern, 2 inches and smaller; globe pattern, 2 ½ inches and larger.

b. Single-seated, equal percentage characteristics (unless otherwise noted or specified), renewable trim.

c. Adjustable start point and operating range as required.

4. Hydronic, 3-way, mixing/bypass, proportional:

a. Globe pattern, constant total flow characteristics, renewable trim, adjustable start point and operating range as required.

b. Configuration (NO, NC, C) as shown.

I. Actuators:

1. Linkage, cams, stroke, timing, torque, etc. complementary with the needs of the associated controlled device.

2. Controlled device (damper, valve) position monitoring (except units serving heating and/or cooling terminals) shall be 'feedback' via their associated actuator(s).

J. Sensors:

1. General:

a. Appropriate range.

b. Suitable for service in accordance with the associated medium and ambient conditions.

2. Temperature:

    a. General:

        1) Resistance temperature device (RTD), thermistor.

        2) Performance parameters:

            a) Accuracy: ± 0.10% FS.

            b) Non-linearity: ± 0.10% FS.

    b. Space:

        1) General:

            a) Location coordinated with other elements contributing to the function and aesthetics of the associated wall elevation.

        2) Attributes (as shown and/or noted on the drawings):

            a) Adjustable (remote).

            b) Indicating (liquid crystal display).

    c. Immersion/insertion:

        1) Well, easily removable probe.

        2) Weather resistant housing as required.

3. Humidity:

    a. General:

        1) Resistance bulk polymer.

        2) Zero and span potentiometers.

    b. Performance parameters:

        1) Accuracy: ± 2.0% (20% rh to 95% rh).

4. Pressure:

    a. General:

        1) Capacitance type.

        2) Thermal coefficient matched components, temperature compensated.

    b. Gases:

        1) Stainless steel diaphragm, insulated stainless steel electrode.

2) Performance parameters:

a) Accuracy: ± 1.0% FS.

b) Non-linearity: ± 1.0% FS.

c) Hysteresis: 0.10% FS.

d) Non-repeatability: 0.05% FS.

c. Liquids:

1) Stainless steel components, elastomer seals.

2) 3-valve manifold assembly, bleed ports.

3) Performance parameters:

a) Accuracy: ± 0.25% FS.

b) Non-linearity: ± 0.20% FS.

c) Hysteresis: 0.10% FS.

d) Non-repeatability: 0.05% FS.

5. Hydronic flowrate:

a. General:

1) Microprocessor based, electromagnetic induction type.

2) NEMA 6 enclosure, self-monitoring, PROM memory, galvanic isolation.

3) Liquid crystal display.

4) Remote transmitter mounting.

b. Features:

1) Flowrate.

2) Totalizers.

3) Low flow cutoff.

4) Flow direction.

c. Performance parameters.

1) Accuracy: ± 0.5% FS.

2) Repeatability: 0.1% FS.

K. Water leak detection:

1. Isolated dry contacts.

2. Building management system compatible.

L. Water meters:

1. Sealed register, magnetic drive.

2. Center sweep hand dial, leak indicator, dome glass lens.

3. Impulse contactor, building management system interface compatible.

M. Low limit thermostats (serving hydronic and/or steam coils):

1. Appropriate set point range, 120 volt, adjustable sensitivity (2F, minimum), manual reset, connecting capillary tube (20 feet long, minimum).

2. Capable of responding to the lowest temperature sensed by any one foot portion.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

A. Electrical wiring:

1. Wiring required to accomplish the temperature control sequences herein specified shall be the responsibility of this Contractor and installed in strict accordance with the National Electrical Code.

2. Power wiring required to energize the control systems shall be the responsibility of this Contractor and executed by the Electrical Contractor.

3. Wiring associated with DDC components shall be twisted, low voltage, shielded (as required), plenum cable.

4. Exposed wiring below 8 feet above finished floor shall be installed in DEDICATED electrical metallic tubing with set-screw and compression type couplings and connectors for interior dry locations and interior wet locations or exterior locations, respectively.

5. Provide conduit labels (located to ensure continuous systems recognition) and identification at wiring terminations).

B. REMOVE ALL EXTRANEOUS PORTIONS OF EXISTING CONTROL SYSTEMS THAT ARE UNNECESSARY TO COMPLEMENT THE PROPOSED RETROFIT.

### 3.02 SEQUENCES

A. System Control, General:

1. The fundamental objective of the control sequences is to provide system control of reasonable complexity that minimizes energy consumption while meeting the associated demands.

2. Unless otherwise specified and/or noted, all temperatures shall be considered as dry bulb graduations.

3. Airside economizer/return air related enthalpy preference shall be determined in context with global outside air and return air temperature and humidity sensors.

4. Software formulated optimization relative to systems and/or systems components operation shall be manifested by appropriately developed algorithms considering pertinent variables and associated trend logs.

5. Time-of-day scheduling shall automatically (with manual over-ride) select the system cycles (occupied, unoccupied) of operation.

6. Sequences for each device replaced are included in Appendix I of this document.

**END OF SECTION**

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | DX-1 | AI-1 | DA-T | Discharge Air Temp | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | UI-1 | DA-T | Discharge Air Temp |
| NAE-1 | N2-1 | DX-1 | AI-2 | ZN-T | Zone Temperature | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | UI-2 | ZN-T | Zone Temperature |
| NAE-1 | N2-1 | DX-1 | AI-3 | MA-T | Mixed Air Temp | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | UI-3 | MA-T | Mixed Air Temp |
| NAE-1 | N2-1 | DX-1 | AI-4 | HtgVlv-S | Heating Valve Position | Remove point and associated wiring | NAE-1 | FC-1 | CGM-5 | UI-4 | OA-T | Outdoor Air Temp |
| NAE-1 | N2-1 | DX-1 | AI-5 | ClgVlv-S | Cooling Valve Position | Remove point and associated wiring | NAE-1 | FC-1 | CGM-5 | UI-5 | OA-H | Outdoor Air Humidity |
| NAE-1 | N2-1 | DX-1 | AI-6 | OA-T | Outdoor Air Temp | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | UI-6 | FILT-DP | Pre-Filter Differential Pressure |
| NAE-1 | N2-1 | DX-1 | AI-7 | OA-H | Outdoor Air Humidity | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | UI-7 | RA-T | Return Air Temperature |
| NAE-1 | N2-1 | DX-1 | AI-8 | OAD-S | Outdoor Air Damper Position | Remove point and associated wiring | NAE-1 | FC-1 | CGM-5 | BI-1 | SF-S | Supply Fan Status |
| NAE-1 | N2-1 | DX-1 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | BI-2 | LT-ALM | Low Temperature Alarm |
| NAE-1 | N2-1 | DX-1 | DI-2 | LT-ALM | Low Temperature Alarm | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | BO-1 | SF-C | Supply Fan Command |
| NAE-1 | N2-1 | DX-1 | DI-3 | - | - | - | NAE-1 | FC-1 | CGM-5 | BO-2 | E-SDWN-C | Emergency Shutdown Command |
| NAE-1 | N2-1 | DX-1 | DI-4 | - | - | - | NAE-1 | FC-1 | CGM-5 | BO-3 | - | - |
| NAE-1 | N2-1 | DX-1 | DI-5 | - | - | - | NAE-1 | FC-1 | CGM-5 | CO-1 | HtgVlv-C | Heating Valve Control |
| NAE-1 | N2-1 | DX-1 | DI-6 | - | - | - | NAE-1 | FC-1 | CGM-5 | CO-2 | ClgVlv-C | Cooling Valve Control |
| NAE-1 | N2-1 | DX-1 | DI-7 | - | - | - | NAE-1 | FC-1 | CGM-5 | CO-3 | OAD-C | Outdoor Air Damper Control |
| NAE-1 | N2-1 | DX-1 | DI-8 | - | - | - | NAE-1 | FC-1 | CGM-5 | CO-4 | RAD-C | Return Air Damper Control |
| NAE-1 | N2-1 | DX-1 | AO-1 | HtgVlv-C | Heating Valve Control | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | AO-1 | - | - |
| NAE-1 | N2-1 | DX-1 | AO-2 | ClgVlv-C | Cooling Valve Control | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | AO-2 | - | - |
| NAE-1 | N2-1 | DX-1 | AO-9 | OAD-C | Outdoor Air Damper Control | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | XPM1 UI-1 | HALL-T | Exit Hall Temp |
| NAE-1 | N2-1 | DX-1 | AO-10 | RAD-C | Return Air Damper Control | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | XPM1 UI-2 | B129-T | Room B129 Temp |
| NAE-1 | N2-1 | DX-1 | AO-11 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 UI-3 | B130-T | Room B130 Temp |
| NAE-1 | N2-1 | DX-1 | AO-12 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 UI-4 | B131-T | Room B131 Temp |
| NAE-1 | N2-1 | DX-1 | AO-13 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 UI-5 | B132-T | Room B132 Temp |
| NAE-1 | N2-1 | DX-1 | AO-14 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 UI-6 | - | - |
| NAE-1 | N2-1 | DX-1 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | XPM1 UI-7 | - | - |
| NAE-1 | N2-1 | DX-1 | DO-4 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 BI-1 | - | - |
| NAE-1 | N2-1 | DX-1 | DO-5 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | XPM1 BI-2 | - | - |
| NAE-1 | N2-1 | DX-1 | DO-6 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 BO-1 | - | - |
| NAE-1 | N2-1 | DX-1 | DO-7 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 BO-2 | - | - |
| NAE-1 | N2-1 | DX-1 | DO-8 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 BO-3 | - | - |
| NAE-1 | N2-1 | DX-1 | XT1AI1 | RAD-S | Return Air Damper Position | Remove point and associated wiring | NAE-1 | FC-1 | CGM-5 | XPM1 CO-1 | HALL-FTV | Exit Hall Fin Tube Valve |
| NAE-1 | N2-1 | DX-1 | XT1AI2 | FILT-DP | Pre-Filter Differential Pressure | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | XPM1 CO-2 | B129-FTV | Room B129 Fin Tube Valve |
| NAE-1 | N2-1 | DX-1 | XT1AI3 | RA-T | Return Air Temperature | Move to new controller CGM-5 | NAE-1 | FC-1 | CGM-5 | XPM1 CO-3 | B130-FTV | Room B130 Fin Tube Valve |
| NAE-1 | N2-1 | DX-1 | XT1AI4 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 CO-4 | B131-FTV | Room B131 Fin Tube Valve |
| NAE-1 | N2-1 | DX-1 | XT1AI5 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 AO-1 | B132-FTV | Room B132 Fin Tube Valve |
| NAE-1 | N2-1 | DX-1 | XT1AI6 | - | - | - | NAE-1 | FC-1 | CGM-5 | XPM1 AO-2 | - | - |
| NAE-1 | N2-1 | DX-1 | XT1AO1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-1 | XT1AO2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AI-1 | HALL-T | Exit Hall Temp | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AI-2 | B129-T | Room B129 Temp | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AI-3 | B130-T | Room B130 Temp | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AI-4 | B131-T | Room B131 Temp | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AO-1 | HALL-FTV | Exit Hall Fin Tube Valve | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AO-2 | B129-FTV | Room B129 Fin Tube Valve | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AO-3 | B130-FTV | Room B130 Fin Tube Valve | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-21 | AO-4 | B131-FTV | Room B131 Fin Tube Valve | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BI-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BI-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BI-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BO-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-21 | BO-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AI-1 | B132-T | Room B132 Temp | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AI-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AI-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AO-1 | B132-FTV | Room B132 Fin Tube Valve | Move to new controller CGM-5 | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-22 | AO-4 | - | - | - | | | | | | |

**B2 AHU-1 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Utilize AHU zone temperature to control discharge air setpoint between maximum (75 degF, adj.) and minimum (55 degF, adj.) values based on deviation from zone temperature setpoint (70 degF, adj.). Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (55 degF, adj.), control mixed air dampers to minimum position (10% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (53 degF, adj.), closing to less than minimum position if necessary.

**Finned Tube Radiation Control**

When steam is available, modulate finned tube radiation valve(s) to maintain the zone(s) to their respective setpoint (70 degF, adj.)

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE-1 | N2-1 | UNT-22 | BI-1 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BI-2 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BI-3 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BI-4 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BI-5 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BI-6 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BO-1 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BO-2 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BO-3 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-1 | N2-1 | UNT-22 | BO-4 | - | - | - | | | | | | | | | | | | | | | | | | |

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | DX-2 | AI-1 | DA-T | Discharge Air Temp | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | UI-1 | DA-T | Discharge Air Temp |
| NAE-1 | N2-1 | DX-2 | AI-2 | MA-T | Mixed Air Temp | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | UI-2 | MA-T | Mixed Air Temp |
| NAE-1 | N2-1 | DX-2 | AI-3 | RA-T | Return Air Temp | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | UI-3 | RA-T | Return Air Temp |
| NAE-1 | N2-1 | DX-2 | AI-4 | - | - | - | NAE-1 | FC-1 | CGM-6 | UI-4 | RA-H | Return Air Humidity |
| NAE-1 | N2-1 | DX-2 | AI-5 | RA-H | Return Air Humidity | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | UI-5 | DA-SP | Discharge Static Press |
| NAE-1 | N2-1 | DX-2 | AI-6 | DA-SP | Discharge Static Press | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | UI-6 | Filt-DP | Prefilter Diff Press |
| NAE-1 | N2-1 | DX-2 | AI-7 | Filt-DP | Prefilter Diff Press | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | UI-7 | DASP-ALM | Disch Hi Static Alarm |
| NAE-1 | N2-1 | DX-2 | AI-8 | - | - | - | NAE-1 | FC-1 | CGM-6 | BI-1 | SF-S | Supply Fan Status |
| NAE-1 | N2-1 | DX-2 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | BI-2 | LT-ALM | Low Temp Alarm |
| NAE-1 | N2-1 | DX-2 | DI-2 | - | - | - | NAE-1 | FC-1 | CGM-6 | BO-1 | SF-C | Supply Fan Command |
| NAE-1 | N2-1 | DX-2 | DI-3 | LT-ALM | Low Temp Alarm | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | BO-2 | OAF-C | Min OA Fan Command |
| NAE-1 | N2-1 | DX-2 | DI-4 | DASP-ALM | Disch Hi Static Alarm | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | BO-3 | EF1-C | Exhaust Fan 1 Command |
| NAE-1 | N2-1 | DX-2 | DI-5 | DA-SMK | Disch Smoke Detector | Remove point and associated wiring | NAE-1 | FC-1 | CGM-6 | CO-1 | HTG-VLV | Heating Valve Control |
| NAE-1 | N2-1 | DX-2 | DI-6 | OAF-S | Min OA Fan Status | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | CO-2 | CLG-VLV | Cooling Valve Control |
| NAE-1 | N2-1 | DX-2 | DI-7 | EF1-S | Exhaust Fan 1 Status | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | CO-3 | OADPR-C | Outdoor Air Damper Control |
| NAE-1 | N2-1 | DX-2 | DI-8 | OADPR2-S | Min OA Dpr Status | Remove point and associated wiring | NAE-1 | FC-1 | CGM-6 | CO-4 | SF-VSD | Sup Fan VSD Control |
| NAE-1 | N2-1 | DX-2 | AO-1 | HTG-VLV | Heating Valve Control | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | AO-1 | MinOA-Dp | Minimum OA Damper Control |
| NAE-1 | N2-1 | DX-2 | AO-2 | CLG-VLV | Cooling Valve Control | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | AO-2 | RADPR-C | Return Damper Control |
| NAE-1 | N2-1 | DX-2 | AO-9 | - | - | - | NAE-1 | FC-1 | CGM-6 | XPM1 UI-1 | OAF-S | Min OA Fan Status |
| NAE-1 | N2-1 | DX-2 | AO-10 | OADPR-C | Outdoor Air Damper Control | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | XPM1 UI-2 | EF1-S | Exhaust Fan 1 Status |
| NAE-1 | N2-1 | DX-2 | AO-11 | SF-VSD | Sup Fan VSD Control | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | XPM1 UI-3 | - | - |
| NAE-1 | N2-1 | DX-2 | AO-12 | MinOA-Dp | Minimum OA Damper Control | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | XPM1 BI-1 | VSD-ALM | Sup Fan VSD Alarm |
| NAE-1 | N2-1 | DX-2 | AO-13 | RADPR-C | Return Damper Control | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | XPM1 BO-1 | E-SDWN-C | Emergancy Shutdown Command |
| NAE-1 | N2-1 | DX-2 | AO-14 | - | - | - | NAE-1 | FC-1 | CGM-6 | XPM1 BO-2 | - | - |
| NAE-1 | N2-1 | DX-2 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | XPM1 CO-1 | - | - |
| NAE-1 | N2-1 | DX-2 | DO-4 | OAF-C | Min OA Fan Command | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | XPM1 CO-2 | - | - |
| NAE-1 | N2-1 | DX-2 | DO-5 | EF1-C | Exhaust Fan 1 Command | Move to new controller CGM-6 | NAE-1 | FC-1 | CGM-6 | XPM1 CO-3 | - | - |
| NAE-1 | N2-1 | DX-2 | DO-6 | - | - | - | NAE-1 | FC-1 | CGM-6 | XPM1 CO-4 | - | - |
| NAE-1 | N2-1 | DX-2 | DO-7 | E-SDWN-C | Emergancy Shutdown Command | Move to new controller CGM-6 | NAE-1 | FC-1 | | | | |
| NAE-1 | N2-1 | DX-2 | DO-8 | - | - | - | NAE-1 | FC-1 | | | | |
| NAE-1 | N2-1 | DX-2 | XT1AI1 | Htg-POS | Htg Valve Position | Remove point and associated wiring | NAE-1 | FC-1 | | | | |
| NAE-1 | N2-1 | DX-2 | XT1AI2 | Clg-POS | Clg Valve Position | Remove point and associated wiring | NAE-1 | FC-1 | | | | |
| NAE-1 | N2-1 | DX-2 | XT1AI3 | RAD-POS | Return Damper Position | Remove point and associated wiring | NAE-1 | FC-1 | | | | |
| NAE-1 | N2-1 | DX-2 | XT1AI4 | OAD-POS | OA Damper Position | Remove point and associated wiring | NAE-1 | FC-1 | | | | |
| NAE-1 | N2-1 | DX-2 | XT1AI5 | - | - | - | NAE-1 | FC-1 | | | | |
| NAE-1 | N2-1 | DX-2 | XT1AI6 | - | - | - | NAE-1 | FC-1 | | | | |
| NAE-1 | N2-1 | DX-2 | XT1AO1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT1AO2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT2DI1 | VSD-ALM | Sup Fan VSD Alarm | Move to new controller CGM-6 | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT2DI2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT2DI3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT2DI4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT2DO1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT2DO2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT2DO3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-2 | XT2DO4 | - | - | - | | | | | | |

**B2 AHU-2 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve. If the discharge air high static pressure alarm activates, the system shall be shut down. The minimum outdoor air fan shal be run when the outdoor air is above the minimum outdoor air fan setpoint (37 degF, adj.) and be turned off when below.

**Temperature Control**

Utilize difference between zone temperatures and zone temperature setpoints of zones served by this AHU (written to controller from supervisor) to control discharge air setpoint between maximum (62 degF, adj.) and minimum (55 degF, adj.) values. Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (55 degF, adj.), control mixed air dampers to minimum position (10% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (53 degF, adj.), closing to less than minimum position if necessary. Whenever the outdoor air temperature is below the damper switch setpoint (18 degF, adj.) the outdoor air damper shall be forced to 0% open and the minimum outdoor air damper shall modulate with the mixed air damper signal. Above the damper switch setpoint the minimum outdoor air damper shall be commended to 100% and the outdoor air damper shall modulate with the mixed air damper signal.

**Static Pressure Control**

Whenever fan status is proven, modulate signal to supply fan VSD to maintain the discharge static pressure to its setpoint (.5 in wc, adj.)

**Exhaust Fan Control**

Exhaust fan shall be on during occupied hours and off during unoccupied.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | UNT-16 | AI-1 | ZN-T | Zone Temperature | Move to new controller CGM-8 | NAE-1 | FC-1 | CGM-8 | UI-1 | ZN-T | Zone Temperature |
| NAE-1 | N2-1 | UNT-16 | AI-2 | ZN-H | Zone Humidity | Move to new controller CGM-8 | NAE-1 | FC-1 | CGM-8 | UI-2 | ZN-H | Zone Humidity |
| NAE-1 | N2-1 | UNT-16 | AI-3 | DA-T | Discharge Air Temp | Move to new controller CGM-8 | NAE-1 | FC-1 | CGM-8 | UI-3 | DA-T | Discharge Air Temp |
| NAE-1 | N2-1 | UNT-16 | AI-4 | - | - | - | NAE-1 | FC-1 | CGM-8 | BI-1 | SF-S | Supply Fan Status |
| NAE-1 | N2-1 | UNT-16 | AI-5 | - | - | - | NAE-1 | FC-1 | CGM-8 | BO-1 | SF-C | Supply Fan Command |
| NAE-1 | N2-1 | UNT-16 | AI-6 | - | - | - | NAE-1 | FC-1 | CGM-8 | BO-2 | Clg-C | DX Cooling Stage 1 Command |
| NAE-1 | N2-1 | UNT-16 | BI-1 | SF-S | Supply Fan Status | Move to new controller CGM-8 | NAE-1 | FC-1 | CGM-8 | CO-1 | Htg-Vlv | Heating Valve |
| NAE-1 | N2-1 | UNT-16 | BI-2 | - | - | - | NAE-1 | FC-1 | CGM-8 | CO-2 | - | - |
| NAE-1 | N2-1 | UNT-16 | BI-3 | - | - | - | NAE-1 | FC-1 | CGM-8 | CO-3 | - | - |
| NAE-1 | N2-1 | UNT-16 | BI-4 | - | - | - | NAE-1 | FC-1 | CGM-8 | CO-4 | - | - |
| NAE-1 | N2-1 | UNT-16 | AO-1 | Htg-Vlv | Heating Valve | Move to new controller CGM-8 | | | | | | |
| NAE-1 | N2-1 | UNT-16 | AO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-16 | BO-1 | SF-C | Supply Fan Command | Move to new controller CGM-8 | | | | | | |
| NAE-1 | N2-1 | UNT-16 | BO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-16 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-16 | BO-4 | Clg-C | DX Cooling Stage 1 Command | Move to new controller CGM-8 | | | | | | |
| NAE-1 | N2-1 | UNT-16 | BO-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-16 | BO-6 | - | - | - | | | | | | |

**B2 COMSEC AHU Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s).

**Temperature Control**

Modulate heating valve and cycle DX cooling command to maintain AHU zone temperature to its adjustable setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | UNT-25 | AI-1 | B141B-T | Room B141B Zone Temp | Move to new controller CGM-10 | NAE-1 | FC-1 | CGM-10 | UI-1 | B141B-T | Room B141B Zone Temp |
| NAE-1 | N2-1 | UNT-25 | AI-2 | - | - | - | NAE-1 | FC-1 | CGM-10 | UI-2 | B141E-T | Room B141E Zone Temp |
| NAE-1 | N2-1 | UNT-25 | AI-3 | B141E-T | Room B141E Zone Temp | Move to new controller CGM-10 | NAE-1 | FC-1 | CGM-10 | UI-3 | B141G-T | Room B141G Zone Temp |
| NAE-1 | N2-1 | UNT-25 | AI-4 | B141G-T | Room B141G Zone Temp | Move to new controller CGM-10 | NAE-1 | FC-1 | CGM-10 | UI-4 | - | - |
| NAE-1 | N2-1 | UNT-25 | AI-5 | - | - | - | NAE-1 | FC-1 | CGM-10 | UI-5 | - | - |
| NAE-1 | N2-1 | UNT-25 | AI-6 | - | - | - | NAE-1 | FC-1 | CGM-10 | UI-6 | - | - |
| NAE-1 | N2-1 | UNT-25 | AO-1 | B141B -A-V | Room B141B Fin Tube Valve A | Move to new controller CGM-10 | NAE-1 | FC-1 | CGM-10 | UI-7 | - | - |
| NAE-1 | N2-1 | UNT-25 | AO-2 | B141B-B-V | Room B141B Fin Tube Valve B | Move to new controller CGM-10 | NAE-1 | FC-1 | CGM-10 | BI-1 | TEF1-S | Toilet Exhaust Fan 1 Status |
| NAE-1 | N2-1 | UNT-25 | AO-3 | B141E-V | Room B141E Fin Tube Valve | Move to new controller CGM-10 | NAE-1 | FC-1 | CGM-10 | BI-2 | - | - |
| NAE-1 | N2-1 | UNT-25 | AO-4 | B141G-V | Room B141G Fin Tube Valve | Move to new controller CGM-10 | NAE-1 | FC-1 | CGM-10 | BO-1 | TEF1-C | Toilet Exhaust Fan 1 Command |
| NAE-1 | N2-1 | UNT-25 | BI-1 | - | - | - | NAE-1 | FC-1 | CGM-10 | BO-2 | - | - |
| NAE-1 | N2-1 | UNT-25 | BI-2 | - | - | - | NAE-1 | FC-1 | CGM-10 | BO-3 | - | - |
| NAE-1 | N2-1 | UNT-25 | BI-3 | - | - | - | NAE-1 | FC-1 | CGM-10 | CO-1 | B141B -A-V | Room B141B Fin Tube Valve A |
| NAE-1 | N2-1 | UNT-25 | BI-4 | - | - | - | NAE-1 | FC-1 | CGM-10 | CO-2 | B141B-B-V | Room B141B Fin Tube Valve B |
| NAE-1 | N2-1 | UNT-25 | BI-5 | - | - | - | NAE-1 | FC-1 | CGM-10 | CO-3 | B141E-V | Room B141E Fin Tube Valve |
| NAE-1 | N2-1 | UNT-25 | BI-6 | - | - | - | NAE-1 | FC-1 | CGM-10 | CO-4 | B141G-V | Room B141G Fin Tube Valve |
| NAE-1 | N2-1 | UNT-25 | BO-1 | - | - | - | NAE-1 | FC-1 | CGM-10 | AO-1 | - | - |
| NAE-1 | N2-1 | UNT-25 | BO-2 | - | - | - | NAE-1 | FC-1 | CGM-10 | AO-2 | - | - |
| NAE-1 | N2-1 | UNT-25 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-25 | BO-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AI-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AI-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AI-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AI-7 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AI-8 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | DI-1 | TEF1-S | Toilet Exhaust Fan 1 Status | Move to new controller CGM-10 | | | | | | |
| NAE-1 | N2-1 | DX-6 | DI-2 | CHWP1-S | CHW Pump 1 Status | Remove point and associated wiring | | | | | | |
| NAE-1 | N2-1 | DX-6 | DI-3 | CHWP2-S | CHW Pump 2 Status | Remove point and associated wiring | | | | | | |
| NAE-1 | N2-1 | DX-6 | DI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | DI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | DI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | DI-7 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | DI-8 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AO-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AO-9 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AO-10 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AO-11 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AO-12 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AO-13 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | AO-14 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | DO-3 | TEF1-C | Toilet Exhaust Fan 1 Command | Move to new controller CGM-10 | | | | | | |
| NAE-1 | N2-1 | DX-6 | DO-4 | CHWP1-C | CHW Pump 1 Command | Remove point and associated wiring | | | | | | |
| NAE-1 | N2-1 | DX-6 | DO-5 | CHWP2-C | CHW Pump 2 Command | Remove point and associated wiring | | | | | | |
| NAE-1 | N2-1 | DX-6 | DO-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | DO-7 | - | - | - | | | | | | |
| NAE-1 | N2-1 | DX-6 | DO-8 | - | - | - | | | | | | |

**B2 Fin Tube Control**

**Finned Tube Radiation Control**

When steam is available, modulate finned tube radiation valve(s) to maintain the zone(s) to their respective setpoint (70 degF, adj.)

**Exhaust Fan Control**

Exhaust fan shall be on during occupied hours and off during unoccupied.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | UNT-7 | AI-1 | B109-T | Room B109 Zone Temp | Move to new controller CGM-21 | NAE-1 | FC-2 | CGM-21 | UI-1 | B109-T | Room B109 Zone Temp |
| NAE-1 | N2-1 | UNT-7 | AI-2 | B107-T | Room B107 Zone Temp | Move to new controller CGM-21 | NAE-1 | FC-2 | CGM-21 | UI-2 | B107-T | Room B107 Zone Temp |
| NAE-1 | N2-1 | UNT-7 | AI-3 | B100NE-T | Room B100NE Zone Temp | Move to new controller CGM-21 | NAE-1 | FC-2 | CGM-21 | UI-3 | B100NE-T | Room B100NE Zone Temp |
| NAE-1 | N2-1 | UNT-7 | AI-4 | - | - | - | NAE-1 | FC-2 | CGM-21 | BI-1 | - | - |
| NAE-1 | N2-1 | UNT-7 | AI-5 | - | - | - | NAE-1 | FC-2 | CGM-21 | BO-1 | - | - |
| NAE-1 | N2-1 | UNT-7 | AI-6 | - | - | - | NAE-1 | FC-2 | CGM-21 | BO-2 | - | - |
| NAE-1 | N2-1 | UNT-7 | BI-1 | - | - | - | NAE-1 | FC-2 | CGM-21 | CO-1 | B109-Dpr | Room B109 VAV Damper Control |
| NAE-1 | N2-1 | UNT-7 | BI-2 | - | - | - | NAE-1 | FC-2 | CGM-21 | CO-2 | B107-Dpr | Room B107 VAV Damper Control |
| NAE-1 | N2-1 | UNT-7 | BI-3 | - | - | - | NAE-1 | FC-2 | CGM-21 | CO-3 | B100NE-Dpr | Room B100NE VAV Damper Control |
| NAE-1 | N2-1 | UNT-7 | BI-4 | - | - | - | NAE-1 | FC-2 | CGM-21 | CO-4 | - | - |
| NAE-1 | N2-1 | UNT-7 | BO-1 | B109-Op | Room B109 Dpr Open | Move to new controller CGM-21, change to AO | | | | | | |
| NAE-1 | N2-1 | UNT-7 | BO-2 | B109-Cl | Room B109 Dpr Close | Move to new controller CGM-21, change to AO | | | | | | |
| NAE-1 | N2-1 | UNT-7 | BO-3 | B107-Op | Room B107 Dpr Open | Move to new controller CGM-21, change to AO | | | | | | |
| NAE-1 | N2-1 | UNT-7 | BO-4 | B107-Cl | Room B107 Dpr Close | Move to new controller CGM-21, change to AO | | | | | | |
| NAE-1 | N2-1 | UNT-7 | BO-5 | B100NE-Op | Room B100NE Dpr Open | Move to new controller CGM-21, change to AO | | | | | | |
| NAE-1 | N2-1 | UNT-7 | BO-6 | B100NE-Cl | Room B100NE Dpr Close | Move to new controller CGM-21, change to AO | | | | | | |
| NAE-1 | N2-1 | UNT-7 | BO-7 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-7 | BO-8 | - | - | - | | | | | | |

**B2 VAV Control**

**Air Flow Control**

Modulate pressure dependant VAV damper open for cooling and closed for heating to maintain the respective zone temperature to its adjustable setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | UNT-8 | AI-1 | B100S-T | Room B100S Zone Temp | Move to new controller CGM-22 | NAE-1 | FC-2 | CGM-22 | UI-1 | B100S-T | Room B100S Zone Temp |
| NAE-1 | N2-1 | UNT-8 | AI-2 | B100NW-T | Room B100NW Zone Temp | Move to new controller CGM-22 | NAE-1 | FC-2 | CGM-22 | UI-2 | B100NW-T | Room B100NW Zone Temp |
| NAE-1 | N2-1 | UNT-8 | AI-3 | B101-T | Room B101 Zone Temp | Move to new controller CGM-22 | NAE-1 | FC-2 | CGM-22 | UI-3 | B101-T | Room B101 Zone Temp |
| NAE-1 | N2-1 | UNT-8 | AI-4 | - | - | - | NAE-1 | FC-2 | CGM-22 | UI-4 | - | - |
| NAE-1 | N2-1 | UNT-8 | AI-5 | - | - | - | NAE-1 | FC-2 | CGM-22 | UI-5 | - | - |
| NAE-1 | N2-1 | UNT-8 | AI-6 | - | - | - | NAE-1 | FC-2 | CGM-22 | UI-6 | - | - |
| NAE-1 | N2-1 | UNT-8 | BI-1 | - | - | - | NAE-1 | FC-2 | CGM-22 | UI-7 | - | - |
| NAE-1 | N2-1 | UNT-8 | BI-2 | - | - | - | NAE-1 | FC-2 | CGM-22 | BI-1 | - | - |
| NAE-1 | N2-1 | UNT-8 | BI-3 | - | - | - | NAE-1 | FC-2 | CGM-22 | BI-2 | - | - |
| NAE-1 | N2-1 | UNT-8 | BI-4 | - | - | - | NAE-1 | FC-2 | CGM-22 | BO-1 | - | - |
| NAE-1 | N2-1 | UNT-8 | BO-1 | B100S-Op | Room B100S Dpr Open | Move to new controller CGM-22, change to AO | NAE-1 | FC-2 | CGM-22 | BO-2 | - | - |
| NAE-1 | N2-1 | UNT-8 | BO-2 | B100S-Cl | Room B100S Dpr Close | Move to new controller CGM-22, change to AO | NAE-1 | FC-2 | CGM-22 | BO-3 | - | - |
| NAE-1 | N2-1 | UNT-8 | BO-3 | B100NW-Op | Room B100NW Dpr Open | Move to new controller CGM-22, change to AO | NAE-1 | FC-2 | CGM-22 | CO-1 | B100S-Dpr | Room B100S VAV Damper Control |
| NAE-1 | N2-1 | UNT-8 | BO-4 | B100NW-Cl | Room B100NW Dpr Close | Move to new controller CGM-22, change to AO | NAE-1 | FC-2 | CGM-22 | CO-2 | B100NW-Dpr | Room B100NW VAV Damper Control |
| NAE-1 | N2-1 | UNT-8 | BO-5 | B101-Op | Room B101 Dpr Open | Move to new controller CGM-22, change to AO | NAE-1 | FC-2 | CGM-22 | CO-3 | B101-Dpr | Room B101 VAV Damper Control |
| NAE-1 | N2-1 | UNT-8 | BO-6 | B101-Cl | Room B101 Dpr Close | Move to new controller CGM-22, change to AO | NAE-1 | FC-2 | CGM-22 | CO-4 | - | - |
| NAE-1 | N2-1 | UNT-8 | BO-7 | - | - | - | NAE-1 | FC-2 | CGM-22 | AO-1 | B100NW-V | Room B100NW Fin Tube Valve |
| NAE-1 | N2-1 | UNT-8 | BO-8 | - | - | - | NAE-1 | FC-2 | CGM-22 | AO-2 | B101-V | Room B101 Fin Tube Valve |
| NAE-1 | N2-1 | UNT-19 | AI-1 | B100NW-T | Room B100NW Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-2 | B101-T | Room B101 Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-3 | B100SW-T | Room B100SW Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-4 | C122-T | Room C122 Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-1 | B100NW-V | Room B100NW Fin Tube Valve | Move to new controller CGM-22 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-2 | B101-V | Room B101 Fin Tube Valve | Move to new controller CGM-22 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-3 | B100SW-V | Room B100SW Fin Tube Valve | Move to new controller CGM-23 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-4 | C122-V | Room C122 Fin Tube Valve | Move to new controller CGM-24 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-4 | - | - | - | | | | | | |

**B2 VAV Control**

**Air Flow Control**

Modulate pressure dependant VAV damper open for cooling and closed for heating to maintain the respective zone temperature to its adjustable setpoint.

**Finned Tube Radiation Control**

When steam is available, modulate finned tube radiation valve(s) to maintain the zone(s) to their respective setpoint (70 degF, adj.)

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | UNT-9 | AI-1 | B100SW-T | Room B100SW Zone Temp | Move to new controller CGM-23 | NAE-1 | FC-2 | CGM-23 | UI-1 | B100SW-T | Room B100SW Zone Temp |
| NAE-1 | N2-1 | UNT-9 | AI-2 | C115N-T | Room C115N Zone Temp | Move to new controller CGM-23 | NAE-1 | FC-2 | CGM-23 | UI-2 | C115N-T | Room C115N Zone Temp |
| NAE-1 | N2-1 | UNT-9 | AI-3 | C115S-T | Room C115S Zone Temp | Move to new controller CGM-23 | NAE-1 | FC-2 | CGM-23 | UI-3 | C115S-T | Room C115S Zone Temp |
| NAE-1 | N2-1 | UNT-9 | AI-4 | - | - | - | NAE-1 | FC-2 | CGM-23 | UI-4 | - | - |
| NAE-1 | N2-1 | UNT-9 | AI-5 | - | - | - | NAE-1 | FC-2 | CGM-23 | UI-5 | - | - |
| NAE-1 | N2-1 | UNT-9 | AI-6 | - | - | - | NAE-1 | FC-2 | CGM-23 | UI-6 | - | - |
| NAE-1 | N2-1 | UNT-9 | BI-1 | - | - | - | NAE-1 | FC-2 | CGM-23 | UI-7 | - | - |
| NAE-1 | N2-1 | UNT-9 | BI-2 | - | - | - | NAE-1 | FC-2 | CGM-23 | BI-1 | - | - |
| NAE-1 | N2-1 | UNT-9 | BI-3 | - | - | - | NAE-1 | FC-2 | CGM-23 | BI-2 | - | - |
| NAE-1 | N2-1 | UNT-9 | BI-4 | - | - | - | NAE-1 | FC-2 | CGM-23 | BO-1 | - | - |
| NAE-1 | N2-1 | UNT-9 | BO-1 | B100SW-Op | Room B100SW Dpr Open | Move to new controller CGM-23, change to AO | NAE-1 | FC-2 | CGM-23 | BO-2 | - | - |
| NAE-1 | N2-1 | UNT-9 | BO-2 | B100SW-Cl | Room B100SW Dpr Close | Move to new controller CGM-23, change to AO | NAE-1 | FC-2 | CGM-23 | BO-3 | - | - |
| NAE-1 | N2-1 | UNT-9 | BO-3 | C115N-Op | Room C115N Dpr Open | Move to new controller CGM-23, change to AO | NAE-1 | FC-2 | CGM-23 | CO-1 | B100SW-Dpr | Room B100SW VAV Damper Control |
| NAE-1 | N2-1 | UNT-9 | BO-4 | C115N-Cl | Room C115N Dpr Close | Move to new controller CGM-23, change to AO | NAE-1 | FC-2 | CGM-23 | CO-2 | C115N-Dpr | Room C115N VAV Damper Control |
| NAE-1 | N2-1 | UNT-9 | BO-5 | C115S-Op | Room C115S Dpr Open | Move to new controller CGM-23, change to AO | NAE-1 | FC-2 | CGM-23 | CO-3 | C115S-Dpr | Room C115S VAV Damper Control |
| NAE-1 | N2-1 | UNT-9 | BO-6 | C115S-Cl | Room C115S Dpr Close | Move to new controller CGM-23, change to AO | NAE-1 | FC-2 | CGM-23 | CO-4 | - | - |
| NAE-1 | N2-1 | UNT-9 | BO-7 | - | - | - | NAE-1 | FC-2 | CGM-23 | AO-1 | B100SW-V | Room B100SW Fin Tube Valve |
| NAE-1 | N2-1 | UNT-9 | BO-8 | - | - | - | NAE-1 | FC-2 | CGM-23 | AO-2 | - | - |
| NAE-1 | N2-1 | UNT-19 | AI-1 | B100NW-T | Room B100NW Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-2 | B101-T | Room B101 Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-3 | B100SW-T | Room B100SW Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-4 | C122-T | Room C122 Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-1 | B100NW-V | Room B100NW Fin Tube Valve | Move to new controller CGM-22 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-2 | B101-V | Room B101 Fin Tube Valve | Move to new controller CGM-22 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-3 | B100SW-V | Room B100SW Fin Tube Valve | Move to new controller CGM-23 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-4 | C122-V | Room C122 Fin Tube Valve | Move to new controller CGM-24 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-4 | - | - | - | | | | | | |

**B2 VAV Control**

**Air Flow Control**

Modulate pressure dependant VAV damper open for cooling and closed for heating to maintain the respective zone temperature to its adjustable setpoint.

**Finned Tube Radiation Control**

When steam is available, modulate finned tube radiation valve(s) to maintain the zone(s) to their respective setpoint (70 degF, adj.)

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | UNT-10 | AI-1 | C119-T | Room C119 Zone Temp | Move to new controller CGM-24 | NAE-1 | FC-2 | CGM-24 | UI-1 | C119-T | Room C119 Zone Temp |
| NAE-1 | N2-1 | UNT-10 | AI-2 | C122-T | Room C122 Zone Temp | Move to new controller CGM-24 | NAE-1 | FC-2 | CGM-24 | UI-2 | C122-T | Room C122 Zone Temp |
| NAE-1 | N2-1 | UNT-10 | AI-3 | C116-T | Room C116 Zone Temp | Move to new controller CGM-24 | NAE-1 | FC-2 | CGM-24 | UI-3 | C116-T | Room C116 Zone Temp |
| NAE-1 | N2-1 | UNT-10 | AI-4 | C124-T | Room C124 Zone Temp | Move to new controller CGM-24 | NAE-1 | FC-2 | CGM-24 | UI-4 | C124-T | Room C124 Zone Temp |
| NAE-1 | N2-1 | UNT-10 | AI-5 | - | - | - | NAE-1 | FC-2 | CGM-24 | UI-5 | C123-T | Room C123 Zone Temp |
| NAE-1 | N2-1 | UNT-10 | AI-6 | - | - | - | NAE-1 | FC-2 | CGM-24 | UI-6 | - | - |
| NAE-1 | N2-1 | UNT-10 | BI-1 | - | - | - | NAE-1 | FC-2 | CGM-24 | UI-7 | - | - |
| NAE-1 | N2-1 | UNT-10 | BI-2 | - | - | - | NAE-1 | FC-2 | CGM-24 | BI-1 | - | - |
| NAE-1 | N2-1 | UNT-10 | BI-3 | - | - | - | NAE-1 | FC-2 | CGM-24 | BI-2 | - | - |
| NAE-1 | N2-1 | UNT-10 | BI-4 | - | - | - | NAE-1 | FC-2 | CGM-24 | BO-1 | - | - |
| NAE-1 | N2-1 | UNT-10 | BO-1 | C119-Op | Room C119 Dpr Open | Move to new controller CGM-24, change to AO | NAE-1 | FC-2 | CGM-24 | BO-2 | - | - |
| NAE-1 | N2-1 | UNT-10 | BO-2 | C119-Cl | Room C119 Dpr Close | Move to new controller CGM-24, change to AO | NAE-1 | FC-2 | CGM-24 | BO-3 | - | - |
| NAE-1 | N2-1 | UNT-10 | BO-3 | C122-Op | Room C122 Dpr Open | Move to new controller CGM-24, change to AO | NAE-1 | FC-2 | CGM-24 | CO-1 | C119-Dpr | Room C119 VAV Damper Control |
| NAE-1 | N2-1 | UNT-10 | BO-4 | C122-Cl | Room C122 Dpr Close | Move to new controller CGM-24, change to AO | NAE-1 | FC-2 | CGM-24 | CO-2 | C122-Dpr | Room C122 VAV Damper Control |
| NAE-1 | N2-1 | UNT-10 | BO-5 | C116-Op | Room C116 Dpr Open | Move to new controller CGM-24, change to AO | NAE-1 | FC-2 | CGM-24 | CO-3 | C116-Dpr | Room C116 VAV Damper Control |
| NAE-1 | N2-1 | UNT-10 | BO-6 | C116-Cl | Room C116 Dpr Close | Move to new controller CGM-24, change to AO | NAE-1 | FC-2 | CGM-24 | CO-4 | C124-Dpr | Room C124 VAV Damper Control |
| NAE-1 | N2-1 | UNT-10 | BO-7 | C124-Op | Room C124 Dpr Open | Move to new controller CGM-24, change to AO | NAE-1 | FC-2 | CGM-24 | AO-1 | C122-V | Room C122 Fin Tube Valve |
| NAE-1 | N2-1 | UNT-10 | BO-8 | C124-Cl | Room C124 Dpr Close | Move to new controller CGM-24, change to AO | NAE-1 | FC-2 | CGM-24 | AO-2 | C123-V | Room C123 Fin Tube Valve |
| NAE-1 | N2-1 | UNT-19 | AI-1 | B100NW-T | Room B100NW Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-2 | B101-T | Room B101 Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-3 | B100SW-T | Room B100SW Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-4 | C122-T | Room C122 Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-1 | B100NW-V | Room B100NW Fin Tube Valve | Move to new controller CGM-22 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-2 | B101-V | Room B101 Fin Tube Valve | Move to new controller CGM-22 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-3 | B100SW-V | Room B100SW Fin Tube Valve | Move to new controller CGM-23 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | AO-4 | C122-V | Room C122 Fin Tube Valve | Move to new controller CGM-24 | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-19 | BO-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-1 | C123-T | Room C123 Zone Temp | Move to new controller CGM-24 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-2 | C126SW-T | Room C126SW-T Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-3 | C126NW-T | Room C126NW Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AO-1 | C123-V | Room C123 Fin Tube Valve | Move to new controller CGM-24 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AO-2 | C126SW-V | Room C126SW Fin Tube Valve | Move to new controller CGM-25 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AO-3 | C126CW-V | Room C126CW Fin Tube Valve | Move to new controller CGM-25 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AO-4 | C126NW-V | Room C126NW Fin Tube Valve | Move to new controller CGM-25 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BO-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BO-4 | - | - | - | | | | | | |

**B2 VAV Control**

**Air Flow Control**

Modulate pressure dependant VAV damper open for cooling and closed for heating to maintain the respective zone temperature to its adjustable setpoint.

**Finned Tube Radiation Control**

When steam is available, modulate finned tube radiation valve(s) to maintain the zone(s) to their respective setpoint (70 degF, adj.)

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | UNT-11 | AI-1 | C126E-T | Room C126E Zone Temp | Move to new controller CGM-25 | NAE-1 | FC-2 | CGM-25 | UI-1 | C126E-T | Room C126E Zone Temp |
| NAE-1 | N2-1 | UNT-11 | AI-2 | C126C-T | Room C126C Zone Temp | Move to new controller CGM-25 | NAE-1 | FC-2 | CGM-25 | UI-2 | C126C-T | Room C126C Zone Temp |
| NAE-1 | N2-1 | UNT-11 | AI-3 | C126W-T | Room C126W Zone Temp | Move to new controller CGM-25 | NAE-1 | FC-2 | CGM-25 | UI-3 | C126W-T | Room C126W Zone Temp |
| NAE-1 | N2-1 | UNT-11 | AI-4 | - | - | - | NAE-1 | FC-2 | CGM-25 | UI-4 | - | - |
| NAE-1 | N2-1 | UNT-11 | AI-5 | - | - | - | NAE-1 | FC-2 | CGM-25 | UI-5 | - | - |
| NAE-1 | N2-1 | UNT-11 | AI-6 | - | - | - | NAE-1 | FC-2 | CGM-25 | UI-6 | - | - |
| NAE-1 | N2-1 | UNT-11 | BI-1 | - | - | - | NAE-1 | FC-2 | CGM-25 | UI-7 | - | - |
| NAE-1 | N2-1 | UNT-11 | BI-2 | - | - | - | NAE-1 | FC-2 | CGM-25 | BI-1 | - | - |
| NAE-1 | N2-1 | UNT-11 | BI-3 | - | - | - | NAE-1 | FC-2 | CGM-25 | BI-2 | - | - |
| NAE-1 | N2-1 | UNT-11 | BI-4 | - | - | - | NAE-1 | FC-2 | CGM-25 | BO-1 | - | - |
| NAE-1 | N2-1 | UNT-11 | BO-1 | C126E-Op | Room C126E Dpr Open | Move to new controller CGM-25, change to AO | NAE-1 | FC-2 | CGM-25 | BO-2 | - | - |
| NAE-1 | N2-1 | UNT-11 | BO-2 | C126E-Cl | Room C126E Dpr Close | Move to new controller CGM-25, change to AO | NAE-1 | FC-2 | CGM-25 | BO-3 | - | - |
| NAE-1 | N2-1 | UNT-11 | BO-3 | C126C-Op | Room C126C Dpr Open | Move to new controller CGM-25, change to AO | NAE-1 | FC-2 | CGM-25 | CO-1 | C126E-Dpr | Room C126E VAV Damper Control |
| NAE-1 | N2-1 | UNT-11 | BO-4 | C126C-Cl | Room C126C Dpr Close | Move to new controller CGM-25, change to AO | NAE-1 | FC-2 | CGM-25 | CO-2 | C126C-Dpr | Room C126C VAV Damper Control |
| NAE-1 | N2-1 | UNT-11 | BO-5 | C126W-Op | Room C126W Dpr Open | Move to new controller CGM-25, change to AO | NAE-1 | FC-2 | CGM-25 | CO-3 | C126W-Dpr | Room C126W VAV Damper Control |
| NAE-1 | N2-1 | UNT-11 | BO-6 | C126W-Cl | Room C126W Dpr Close | Move to new controller CGM-25, change to AO | NAE-1 | FC-2 | CGM-25 | CO-4 | C126SW-V | Room C126SW Fin Tube Valve |
| NAE-1 | N2-1 | UNT-11 | BO-7 | - | - | - | NAE-1 | FC-2 | CGM-25 | AO-1 | C126CW-V | Room C126CW Fin Tube Valve |
| NAE-1 | N2-1 | UNT-11 | BO-8 | - | - | - | NAE-1 | FC-2 | CGM-25 | AO-2 | C126NW-V | Room C126NW Fin Tube Valve |
| NAE-1 | N2-1 | UNT-20 | AI-1 | C123-T | Room C123 Zone Temp | Move to new controller CGM-24 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-2 | C126SW-T | Room C126SW-T Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-3 | C126NW-T | Room C126NW Zone Temp (Mapped) | Point only exists in software-delete | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AO-1 | C123-V | Room C123 Fin Tube Valve | Move to new controller CGM-24 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AO-2 | C126SW-V | Room C126SW Fin Tube Valve | Move to new controller CGM-25 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AO-3 | C126CW-V | Room C126CW Fin Tube Valve | Move to new controller CGM-25 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | AO-4 | C126NW-V | Room C126NW Fin Tube Valve | Move to new controller CGM-25 | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-4 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-5 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BI-6 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BO-1 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BO-2 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-20 | BO-4 | - | - | - | | | | | | |

**B2 VAV Control**

**Air Flow Control**

Modulate pressure dependant VAV damper open for cooling and closed for heating to maintain the respective zone temperature to its adjustable setpoint.

**Finned Tube Radiation Control**

When steam is available, modulate finned tube radiation valve(s) to maintain the zone(s) to their respective setpoint (70 degF, adj.)

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-1 | N2-1 | UNT-18 | AI-1 | OA-T | Outdoor Air Temp | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | UI-1 | OA-T | Outdoor Air Temp |
| NAE-1 | N2-1 | UNT-18 | AI-2 | MA-T | Mixed Air Temp | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | UI-2 | MA-T | Mixed Air Temp |
| NAE-1 | N2-1 | UNT-18 | AI-3 | DA-T | Discharge Air Temp | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | UI-3 | DA-T | Discharge Air Temp |
| NAE-1 | N2-1 | UNT-18 | AI-4 | ZN-T | Zone Temp | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | UI-4 | ZN-T | Zone Temp |
| NAE-1 | N2-1 | UNT-18 | AI-5 | FILT-DP | Filter Diff Press | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | UI-5 | FILT-DP | Filter Diff Press |
| NAE-1 | N2-1 | UNT-18 | AI-6 | MA-DPR | Mixed Air Damper Control | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | UI-6 | MA-DPR | Mixed Air Damper Control |
| NAE-1 | N2-1 | UNT-18 | AO-1 | HTG-O | Heating Valve Control | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | UI-7 | - | - |
| NAE-1 | N2-1 | UNT-18 | AO-2 | CLG-O | Cooling Valve Control | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | BI-1 | SF-S | Supply Fan Status |
| NAE-1 | N2-1 | UNT-18 | AO-3 | - | - | - | NAE-1 | FC-2 | CGM-25 | BI-2 | LT-ALM | Low Temp Alarm |
| NAE-1 | N2-1 | UNT-18 | AO-4 | - | - | - | NAE-1 | FC-2 | CGM-25 | BO-1 | - | - |
| NAE-1 | N2-1 | UNT-18 | BI-1 | SF-S | Supply Fan Status | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | BO-2 | - | - |
| NAE-1 | N2-1 | UNT-18 | BI-2 | - | - | - | NAE-1 | FC-2 | CGM-25 | BO-3 | - | - |
| NAE-1 | N2-1 | UNT-18 | BI-3 | LT-ALM | Low Temp Alarm | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | CO-1 | SF-C | Supply Fan Command |
| NAE-1 | N2-1 | UNT-18 | BI-4 | - | - | - | NAE-1 | FC-2 | CGM-25 | CO-2 | E-SDWN-C | Emergency Shutdown Command |
| NAE-1 | N2-1 | UNT-18 | BI-5 | - | - | - | NAE-1 | FC-2 | CGM-25 | CO-3 | - | - |
| NAE-1 | N2-1 | UNT-18 | BI-6 | - | - | - | NAE-1 | FC-2 | CGM-25 | CO-4 | - | - |
| NAE-1 | N2-1 | UNT-18 | BO-1 | SF-C | Supply Fan Command | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | AO-1 | - | - |
| NAE-1 | N2-1 | UNT-18 | BO-2 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-26 | NAE-1 | FC-2 | CGM-25 | AO-2 | - | - |
| NAE-1 | N2-1 | UNT-18 | BO-3 | - | - | - | | | | | | |
| NAE-1 | N2-1 | UNT-18 | BO-4 | - | - | - | | | | | | |

**B2 AHU-3 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Utilize AHU zone temperature to control discharge air setpoint between maximum (75 degF, adj.) and minimum (55 degF, adj.) values based on deviation from zone temperature setpoint (70 degF, adj.). Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (55 degF, adj.), control mixed air dampers to minimum position (10% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (53 degF, adj.), closing to less than minimum position if necessary.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-3 | N2-1 | DX-4 | AI-1 | MA-T | Mixed Air Temp | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | UI-1 | MA-T | Mixed Air Temp | |
| NAE-3 | N2-1 | DX-4 | AI-2 | DA-T | Discharge Air Temp | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | UI-2 | DA-T | Discharge Air Temp | |
| NAE-3 | N2-1 | DX-4 | AI-3 | - | - | - | NAE-3 | FC-2 | CGM-24 | UI-3 | RA-T | Return Air Temp | |
| NAE-3 | N2-1 | DX-4 | AI-4 | RA-T | Return Air Temp | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | UI-4 | RA-H | Return Air Humidity | |
| NAE-3 | N2-1 | DX-4 | AI-5 | RA-H | Return Air Humidity | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | UI-5 | DA1-P | Discharge Air Pressure | |
| NAE-3 | N2-1 | DX-4 | AI-6 | DA1-P | Discharge Air Pressure | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | UI-6 | SF-S | Supply Fan Status | |
| NAE-3 | N2-1 | DX-4 | AI-7 | - | - | - | NAE-3 | FC-2 | CGM-24 | UI-7 | LT-ALM | Low Temperature Alarm | |
| NAE-3 | N2-1 | DX-4 | AI-8 | - | - | - | NAE-3 | FC-2 | CGM-24 | BI-1 | FILT-S | Prefilter Status | |
| NAE-3 | N2-1 | DX-4 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | BI-2 | - | - | |
| NAE-3 | N2-1 | DX-4 | DI-2 | LT-ALM | Low Temperature Alarm | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | BO-1 | SF-C | Supply Fan Command | |
| NAE-3 | N2-1 | DX-4 | DI-3 | FILT-S | Prefilter Status | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | BO-2 | E-SDWN-C | Emergency Shutdown Command | |
| NAE-3 | N2-1 | DX-4 | DI-4 | DA-SMK | Discharge Smoke Detector | Remove point and associated wiring | NAE-3 | FC-2 | CGM-24 | BO-3 | - | - | |
| NAE-3 | N2-1 | DX-4 | DI-5 | RA-SMK | Return Smoke Detector | Remove point and associated wiring | NAE-3 | FC-2 | CGM-24 | CO-1 | OA-DPR | Outdoor Air Damper Control | |
| NAE-3 | N2-1 | DX-4 | DI-6 | - | - | - | NAE-3 | FC-2 | CGM-24 | CO-2 | RA-DPR | Return Air Damper Control | |
| NAE-3 | N2-1 | DX-4 | DI-7 | - | - | - | NAE-3 | FC-2 | CGM-24 | CO-3 | HTG-VLV | Heating Valve Control | |
| NAE-3 | N2-1 | DX-4 | DI-8 | - | - | - | NAE-3 | FC-2 | CGM-24 | CO-4 | CLG-VLV | Cooling Valve Control | |
| NAE-3 | N2-1 | DX-4 | AO-1 | OA-DPR | Outdoor Air Damper Control | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | AO-1 | SF-O | Supply Fan VSD Control | |
| NAE-3 | N2-1 | DX-4 | AO-2 | RA-DPR | Return Air Damper Control | Move to new controller CGM-24 | NAE-3 | FC-2 | CGM-24 | AO-2 | - | - | |
| NAE-3 | N2-1 | DX-4 | AO-9 | HTG-VLV | Heating Valve Control | Move to new controller CGM-24 | | | | | | | |
| NAE-3 | N2-1 | DX-4 | AO-10 | CLG-VLV | Cooling Valve Control | Move to new controller CGM-24 | | | | | | | |
| NAE-3 | N2-1 | DX-4 | AO-11 | SF-O | Supply Fan VSD Control | Move to new controller CGM-24 | | | | | | | |
| NAE-3 | N2-1 | DX-4 | AO-12 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-4 | AO-13 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-4 | AO-14 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-4 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-24 | | | | | | | |
| NAE-3 | N2-1 | DX-4 | DO-4 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-24 | | | | | | | |
| NAE-3 | N2-1 | DX-4 | DO-5 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-4 | DO-6 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-4 | DO-7 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-4 | DO-8 | - | - | - | | | | | | | |

**B3 AHU-A-1 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Reset discharge air setpoint based on outdoor air temperature between maximum (67 degF, adj.) and minimum (62 degF, adj.) values. Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (60 degF, adj.), control mixed air dampers to minimum position (0% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (53 degF, adj.), closing to less than minimum position if necessary.

**Static Pressure Control**

Whenever fan status is proven, modulate signal to supply fan VSD to maintain the discharge static pressure to its setpoint (.7 in wc, adj.)

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-3 | N2-1 | DX-5 | AI-1 | MA-T | Mixed Air Temp | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | UI-1 | MA-T | Mixed Air Temp |
| NAE-3 | N2-1 | DX-5 | AI-2 | DA-T | Discharge Air Temp | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | UI-2 | DA-T | Discharge Air Temp |
| NAE-3 | N2-1 | DX-5 | AI-3 | ZN-T | Zone Temp | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | UI-3 | ZN-T | Zone Temp |
| NAE-3 | N2-1 | DX-5 | AI-4 | RA-T | Return Air Temp | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | UI-4 | RA-T | Return Air Temp |
| NAE-3 | N2-1 | DX-5 | AI-5 | RA-H | Return Air Humidity | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | UI-5 | RA-H | Return Air Humidity |
| NAE-3 | N2-1 | DX-5 | AI-6 | A-Flow | A-Bay CHW Branch Flow | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | UI-6 | FILT-S | Prefilter Status |
| NAE-3 | N2-1 | DX-5 | AI-7 | CHWAS-T | A-Bay CHW Supply Temp | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | UI-7 | - | - |
| NAE-3 | N2-1 | DX-5 | AI-8 | CHWAR-T | A-Bay CHW Return Temp | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | BI-1 | SF-S | Supply Fan Status |
| NAE-3 | N2-1 | DX-5 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | BI-2 | LT-ALM | Low Temperature Alarm |
| NAE-3 | N2-1 | DX-5 | DI-2 | LT-ALM | Low Temperature Alarm | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | BO-1 | SF-C | Supply Fan Command |
| NAE-3 | N2-1 | DX-5 | DI-3 | FILT-S | Prefilter Status | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | BO-2 | - | - |
| NAE-3 | N2-1 | DX-5 | DI-4 | PA1-S | A-Bay CHW Pump 1 Status | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | BO-3 | - | - |
| NAE-3 | N2-1 | DX-5 | DI-5 | PA2-S | A-Bay CHW Pump 2 Status | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | CO-1 | OA-DPR | Outdoor Air Damper Control |
| NAE-3 | N2-1 | DX-5 | DI-6 | - | - | - | NAE-3 | FC-2 | CGM-25 | CO-2 | RA-DPR | Return Air Damper Control |
| NAE-3 | N2-1 | DX-5 | DI-7 | - | - | - | NAE-3 | FC-2 | CGM-25 | CO-3 | HTG-VLV | Heating Valve Control |
| NAE-3 | N2-1 | DX-5 | DI-8 | - | - | - | NAE-3 | FC-2 | CGM-25 | CO-4 | CLG-VLV | Cooling Valve Control |
| NAE-3 | N2-1 | DX-5 | AO-1 | OA-DPR | Outdoor Air Damper Control | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | AO-1 | - | - |
| NAE-3 | N2-1 | DX-5 | AO-2 | RA-DPR | Return Air Damper Control | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | AO-2 | - | - |
| NAE-3 | N2-1 | DX-5 | AO-9 | HTG-VLV | Heating Valve Control | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 UI-1 | A-Flow | A-Bay CHW Branch Flow |
| NAE-3 | N2-1 | DX-5 | AO-10 | CLG-VLV | Cooling Valve Control | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 UI-2 | CHWAS-T | A-Bay CHW Supply Temp |
| NAE-3 | N2-1 | DX-5 | AO-11 | AX-Vlv | A-Bay CHW Loop Bridge Valve Control | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 UI-3 | CHWAR-T | A-Bay CHW Return Temp |
| NAE-3 | N2-1 | DX-5 | AO-12 | PA1-VSD | A-Bay CHW Pump 1 VSD Control | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 UI-4 | Prim1-DP | Primary CHW Loop Diff Press 1 |
| NAE-3 | N2-1 | DX-5 | AO-13 | PA2-VSD | A-Bay CHW Pump 2 VSD Control | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 UI-5 | A1-DP | A-Bay CHW Loop Diff Press |
| NAE-3 | N2-1 | DX-5 | AO-14 | - | - | - | NAE-3 | FC-2 | CGM-25 | XPM1 UI-6 | ASup-T | Supply to A-Bay CHW Temp |
| NAE-3 | N2-1 | DX-5 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 UI-7 | ARet-T | Return from A-Bay CHW Temp |
| NAE-3 | N2-1 | DX-5 | DO-4 | PA1-C | A-Bay CHW Pump 1 Command | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 BI-1 | PA1-S | A-Bay CHW Pump 1 Status |
| NAE-3 | N2-1 | DX-5 | DO-5 | PA2-C | A-Bay CHW Pump 2 Command | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 BI-2 | PA2-S | A-Bay CHW Pump 2 Status |
| NAE-3 | N2-1 | DX-5 | DO-6 | - | - | - | NAE-3 | FC-2 | CGM-25 | XPM1 BO-1 | PA1-C | A-Bay CHW Pump 1 Command |
| NAE-3 | N2-1 | DX-5 | DO-7 | - | - | - | NAE-3 | FC-2 | CGM-25 | XPM1 BO-2 | PA2-C | A-Bay CHW Pump 2 Command |
| NAE-3 | N2-1 | DX-5 | DO-8 | - | - | - | NAE-3 | FC-2 | CGM-25 | XPM1 BO-3 | - | - |
| NAE-3 | N2-1 | DX-5 | XT1AI1 | - | - | - | NAE-3 | FC-2 | CGM-25 | XPM1 CO-1 | AX-Vlv | A-Bay CHW Loop Bridge Valve Control |
| NAE-3 | N2-1 | DX-5 | XT1AI2 | - | - | - | NAE-3 | FC-2 | CGM-25 | XPM1 CO-2 | PA1-VSD | A-Bay CHW Pump 1 VSD Control |
| NAE-3 | N2-1 | DX-5 | XT1AI3 | Prim1-DP | Primary CHW Loop Diff Press 1 | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 CO-3 | PA2-VSD | A-Bay CHW Pump 2 VSD Control |
| NAE-3 | N2-1 | DX-5 | XT1AI4 | A1-DP | A-Bay CHW Loop Diff Press | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 CO-4 | - | - |
| NAE-3 | N2-1 | DX-5 | XT1AI5 | ASup-T | Supply to A-Bay CHW Temp | Move to new controller CGM-25 | NAE-3 | FC-2 | CGM-25 | XPM1 AO-1 | - | - |
| NAE-3 | N2-1 | DX-5 | XT1AI6 | ARet-T | Return from A-Bay CHW Temp | Move to new controller CGM-25 | | | CGM-25 | XPM1 AO-2 | - | - |
| NAE-3 | N2-1 | DX-5 | XT1AO1 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-5 | XT1AO2 | - | - | - | | | | | | |

**B3 AHU-A-2 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the fan(s) shal be turned off. If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Calculate difference between zone temperature and zone temperature setpoint of area served by this AHU to control discharge air setpoint between maximum (62 degF, adj.) and minimum (55 degF, adj.) values. Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (60 degF, adj.), control mixed air dampers to minimum position (10% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (42 degF, adj.), closing to less than minimum position if necessary.

**CHW Pump Control**

Pumps shall be run in a lead/lag arrangement whenever the system enable point is on. The signal to the running pump's VSD shall modulate to maintain the minimum A-Bay loop differential reading to its setpoint (15 PSI, adj.). The controller shall determine the minimum A-Bay loop differential pressure between the point at XPM1 UI5 and another point mapped in from another controller (NAE-3/FC-2/CGM-28).

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-3 | N2-1 | DX-6 | AI-1 | MA-T | Mixed Air Temp | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | UI-1 | MA-T | Mixed Air Temp |
| NAE-3 | N2-1 | DX-6 | AI-2 | DA-T | Discharge Air Temp | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | UI-2 | DA-T | Discharge Air Temp |
| NAE-3 | N2-1 | DX-6 | AI-3 | A8-T | Suite A8 Zone Temp | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | UI-3 | A8-T | Suite A8 Zone Temp |
| NAE-3 | N2-1 | DX-6 | AI-4 | RA-T | Return Air Temp | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | UI-4 | RA-T | Return Air Temp |
| NAE-3 | N2-1 | DX-6 | AI-5 | RA-H | Return Air Humidity | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | UI-5 | RA-H | Return Air Humidity |
| NAE-3 | N2-1 | DX-6 | AI-6 | HWS-T | Hot Water Supply Temp | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | UI-6 | B8-T | Suite B8 Zone Temp |
| NAE-3 | N2-1 | DX-6 | AI-7 | B8-T | Suite B8 Zone Temp | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | UI-7 | C8-T | Suite C8 Zone Temp |
| NAE-3 | N2-1 | DX-6 | AI-8 | C8-T | Suite C8 Zone Temp | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | BI-1 | SF-S | Supply Fan Status |
| NAE-3 | N2-1 | DX-6 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | BI-2 | LT-ALM | Low Temperature Alarm |
| NAE-3 | N2-1 | DX-6 | DI-2 | LT-ALM | Low Temperature Alarm | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | BO-1 | SF-C | Supply Fan Command |
| NAE-3 | N2-1 | DX-6 | DI-3 | FILT-S | Prefilter Status | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | BO-2 | - | - |
| NAE-3 | N2-1 | DX-6 | DI-4 | DA-SMK | Discharge Smoke Detector | Remove point and associated wiring | NAE-3 | FC-2 | CGM-26 | BO-3 | - | - |
| NAE-3 | N2-1 | DX-6 | DI-5 | RA-SMK | Return Smoke Detector | Remove point and associated wiring | NAE-3 | FC-2 | CGM-26 | CO-1 | OA-DPR | Outdoor Air Damper Control |
| NAE-3 | N2-1 | DX-6 | DI-6 | HWP1-S | Hot Water Pump 1 Status | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | CO-2 | RA-DPR | Return Air Damper Control |
| NAE-3 | N2-1 | DX-6 | DI-7 | HWP2-S | Hot Water Pump 2 Status | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | CO-3 | HTG-VLV | Heating Valve Control |
| NAE-3 | N2-1 | DX-6 | DI-8 | - | - | - | NAE-3 | FC-2 | CGM-26 | CO-4 | CLG-VLV | Cooling Valve Control |
| NAE-3 | N2-1 | DX-6 | AO-1 | OA-DPR | Outdoor Air Damper Control | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | AO-1 | - | - |
| NAE-3 | N2-1 | DX-6 | AO-2 | RA-DPR | Return Air Damper Control | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | AO-2 | - | - |
| NAE-3 | N2-1 | DX-6 | AO-9 | HTG-VLV | Heating Valve Control | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | XPM1 UI-1 | HWS-T | Hot Water Supply Temp |
| NAE-3 | N2-1 | DX-6 | AO-10 | CLG-VLV | Cooling Valve Control | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | XPM1 UI-2 | FILT-S | Prefilter Status |
| NAE-3 | N2-1 | DX-6 | AO-11 | HX-VLV | Heat Exchanger Valve | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | XPM1 UI-3 | CUH-T | East Entrance CUH Zone Temp |
| NAE-3 | N2-1 | DX-6 | AO-12 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 UI-4 | CUH-S | East Entrance CUH Fan Status |
| NAE-3 | N2-1 | DX-6 | AO-13 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 UI-5 | - | - |
| NAE-3 | N2-1 | DX-6 | AO-14 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 UI-6 | - | - |
| NAE-3 | N2-1 | DX-6 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | XPM1 UI-7 | - | - |
| NAE-3 | N2-1 | DX-6 | DO-4 | HWP1-C | Hot Water Pump 1 Command | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | XPM1 BI-1 | HWP1-S | Hot Water Pump 1 Status |
| NAE-3 | N2-1 | DX-6 | DO-5 | HWP2-C | Hot Water Pump 2 Command | Move to new controller CGM-26 | NAE-3 | FC-2 | CGM-26 | XPM1 BI-2 | HWP2-S | Hot Water Pump 2 Status |
| NAE-3 | N2-1 | DX-6 | DO-6 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 BO-1 | HWP1-C | Hot Water Pump 1 Command |
| NAE-3 | N2-1 | DX-6 | DO-7 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 BO-2 | HWP2-C | Hot Water Pump 2 Command |
| NAE-3 | N2-1 | DX-6 | DO-8 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 BO-3 | CUH-C | East Entrance CUH Fan Command (Both) |
| NAE-3 | N2-1 | DX-2 | AI-1 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 CO-1 | HX-VLV | Heat Exchanger Valve |
| NAE-3 | N2-1 | DX-2 | AI-2 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 CO-2 | - | - |
| NAE-3 | N2-1 | DX-2 | AI-3 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 CO-3 | - | - |
| NAE-3 | N2-1 | DX-2 | AI-4 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 CO-4 | - | - |
| NAE-3 | N2-1 | DX-2 | AI-5 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 AO-1 | - | - |
| NAE-3 | N2-1 | DX-2 | AI-6 | - | - | - | NAE-3 | FC-2 | CGM-26 | XPM1 AO-2 | - | - |
| NAE-3 | N2-1 | DX-2 | AI-7 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AI-8 | CUH-T | East Entrance CUH Zone Temp | Move to new controller CGM-26 | | | | | | |
| NAE-3 | N2-1 | DX-2 | DI-1 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DI-2 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DI-3 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DI-4 | CUH-S | East Entrance CUH Fan Status | Move to new controller CGM-26 | | | | | | |
| NAE-3 | N2-1 | DX-2 | DI-5 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DI-6 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DI-7 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DI-8 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AO-1 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AO-2 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AO-9 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AO-10 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AO-11 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AO-12 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AO-13 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | AO-14 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DO-3 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DO-4 | CUH-C | East Entrance CUH Fan Command | Move to new controller CGM-26 | | | | | | |
| NAE-3 | N2-1 | DX-2 | DO-5 | CUH-C2 | East Entrance CUH Fan Command | Move to new controller CGM-26 | | | | | | |
| NAE-3 | N2-1 | DX-2 | DO-6 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DO-7 | - | - | - | | | | | | |
| NAE-3 | N2-1 | DX-2 | DO-8 | - | - | - | | | | | | |

**B3 AHU-A-5 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the fan(s) shal be turned off. If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Calculate difference between average of the three (3) zone temperatures and the zone temperature setpoint of the area served by this AHU to calculate the discharge air setpoint between maximum (75 degF, adj.) and minimum (53 degF, adj.) values. Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (60 degF, adj.), control mixed air dampers to minimum position (10% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (42 degF, adj.), closing to less than minimum position if necessary.

**CUH Pump Control**

Whenever the CUH zone temperature is below the CUH zone temperature setpoint (65 degF, adj.), start the CUH fan. Connect both fan command points to one output.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-3 | N2-1 | UNT-62 | AI-1 | - | - | - | NAE-3 | FC-2 | CGM-27 | UI-1 | B2-Btn-S | B2 Shutdown Button Status |
| NAE-3 | N2-1 | UNT-62 | AI-2 | - | - | - | NAE-3 | FC-2 | CGM-27 | UI-2 | B3-Btn-S | B3 Shutdown Button Status |
| NAE-3 | N2-1 | UNT-62 | AI-3 | - | - | - | NAE-3 | FC-2 | CGM-27 | UI-3 | B106BtnS | B106 Shutdown Button Status |
| NAE-3 | N2-1 | UNT-62 | AI-4 | - | - | - | NAE-3 | FC-2 | CGM-27 | BI-1 | - | - |
| NAE-3 | N2-1 | UNT-62 | AI-5 | - | - | - | NAE-3 | FC-2 | CGM-27 | BO-1 | - | - |
| NAE-3 | N2-1 | UNT-62 | AI-6 | - | - | - | NAE-3 | FC-2 | CGM-27 | BO-2 | - | - |
| NAE-3 | N2-1 | UNT-62 | BI-1 | B2-Btn-S | B2 Shutdown Button Status | Move to new controller CGM-27 | NAE-3 | FC-2 | CGM-27 | CO-1 | - | - |
| NAE-3 | N2-1 | UNT-62 | BI-2 | B3-Btn-S | B3 Shutdown Button Status | Move to new controller CGM-27 | NAE-3 | FC-2 | CGM-27 | CO-2 | - | - |
| NAE-3 | N2-1 | UNT-62 | BI-3 | B104BtnS | B104 Shutdown Button Status | Remove point and associated wiring | NAE-3 | FC-2 | CGM-27 | CO-3 | - | - |
| NAE-3 | N2-1 | UNT-62 | BI-4 | B106BtnS | B106 Shutdown Button Status | Move to new controller CGM-27 | NAE-3 | FC-2 | CGM-27 | CO-4 | - | - |
| NAE-3 | N2-1 | UNT-62 | BI-5 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BI-6 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BO-1 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BO-2 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BO-3 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BO-4 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BO-5 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BO-6 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BO-7 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-62 | BO-8 | - | - | - | | | | | | |

**B3 Emergency Shutdown Control**

Supervisory system shall monitor button status's and map shutdown commands to controllers throughout system.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-8 | N2-1 | DX-12 | AI-1 | RA-T | Return Air Temp | Move to new controller CGM-28 | NAE-3 | FC-2 | CGM-28 | UI-1 | RA-T | Return Air Temp |
| NAE-8 | N2-1 | DX-12 | AI-2 | DA-T | Discharge Air Temp | Move to new controller CGM-28 | NAE-3 | FC-2 | CGM-28 | UI-2 | DA-T | Discharge Air Temp |
| NAE-8 | N2-1 | DX-12 | AI-3 | MA-T | Mixed Air Temp | Move to new controller CGM-28 | NAE-3 | FC-2 | CGM-28 | UI-3 | MA-T | Mixed Air Temp |
| NAE-8 | N2-1 | DX-12 | AI-4 | OA-T | Outdoor Air Temp | Move to new controller CGM-28 | NAE-3 | FC-2 | CGM-28 | UI-4 | OA-T | Outdoor Air Temp |
| NAE-8 | N2-1 | DX-12 | AI-5 | A2-DP | A-Bay CHW Diff Press 2 | Move to new controller CGM-28 | NAE-3 | FC-2 | CGM-28 | UI-5 | A2-DP | A-Bay CHW Diff Press 2 |
| NAE-8 | N2-1 | DX-12 | AI-6 | - | - | - | NAE-3 | FC-2 | CGM-28 | UI-6 | - | - |
| NAE-8 | N2-1 | DX-12 | AI-7 | - | - | - | NAE-3 | FC-2 | CGM-28 | UI-7 | - | - |
| NAE-8 | N2-1 | DX-12 | AI-8 | - | - | - | NAE-3 | FC-2 | CGM-28 | BI-1 | SF-S | Supply Fan Status |
| NAE-8 | N2-1 | DX-12 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-28 | NAE-3 | FC-2 | CGM-28 | BI-2 | - | - |
| NAE-8 | N2-1 | DX-12 | DI-2 | - | - | - | NAE-3 | FC-2 | CGM-28 | BO-1 | SF-C | Supply Fan Command |
| NAE-8 | N2-1 | DX-12 | DI-3 | - | - | - | NAE-3 | FC-2 | CGM-28 | BO-2 | E-SDWN-C | Emergency Shutdown Command |
| NAE-8 | N2-1 | DX-12 | DI-4 | - | - | - | NAE-3 | FC-2 | CGM-28 | BO-3 | - | - |
| NAE-8 | N2-1 | DX-12 | DI-5 | - | - | - | NAE-3 | FC-2 | CGM-28 | CO-1 | MA-DPR | Mixed Air Dampers Control |
| NAE-8 | N2-1 | DX-12 | DI-6 | - | - | - | NAE-3 | FC-2 | CGM-28 | CO-2 | HTG-VLV | Heating Valve Control |
| NAE-8 | N2-1 | DX-12 | DI-7 | - | - | - | NAE-3 | FC-2 | CGM-28 | CO-3 | CLG-VLV | Cooling Valve Control |
| NAE-8 | N2-1 | DX-12 | DI-8 | - | - | - | NAE-3 | FC-2 | CGM-28 | CO-4 | - | - |
| NAE-8 | N2-1 | DX-12 | AO-1 | MA-DPR | Mixed Air Dampers Control | Move to new controller CGM-28 | NAE-3 | FC-2 | CGM-28 | AO-1 | - | - |
| NAE-8 | N2-1 | DX-12 | AO-2 | HTG-VLV | Heating Valve Control | Move to new controller CGM-28 | NAE-3 | FC-2 | CGM-28 | AO-2 | - | - |
| NAE-8 | N2-1 | DX-12 | AO-9 | CLG-VLV | Cooling Valve Control | Move to new controller CGM-28 | | | | | | |
| NAE-8 | N2-1 | DX-12 | AO-10 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-12 | AO-11 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-12 | AO-12 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-12 | AO-13 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-12 | AO-14 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-12 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-28 | | | | | | |
| NAE-8 | N2-1 | DX-12 | DO-4 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-12 | DO-5 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-28 | | | | | | |
| NAE-8 | N2-1 | DX-12 | DO-6 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-12 | DO-7 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-12 | DO-8 | - | - | - | | | | | | |

**B3 AHU-A-8 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s).

**Temperature Control**

Calculate difference between return temperature and return temperature setpoint (72 degF, adj.) of this AHU to control discharge air setpoint between maximum (70 degF, adj.) and minimum (53 degF, adj.) values. Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (60 degF, adj.), control mixed air dampers to minimum position (10% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (42 degF, adj.), closing to less than minimum position if necessary.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-8 | N2-1 | VMA-21 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-29 | NAE-3 | FC-2 | CVM-29 | UI-1 | ZN-T | Zone Temp |
| NAE-8 | N2-1 | VMA-21 | AI-2 | WC-ADJ | Remote Adjust | Move to new controller CVM-29 | NAE-3 | FC-2 | CVM-29 | UI-2 | WC-ADJ | Remote Adjust |
| NAE-8 | N2-1 | VMA-21 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-29 | NAE-3 | FC-2 | CVM-29 | UI-3 | - | - |
| NAE-8 | N2-1 | VMA-21 | BI-1 | - | - | - | NAE-3 | FC-2 | CVM-29 | BO-1 | - | - |
| NAE-8 | N2-1 | VMA-21 | BI-2 | - | - | - | NAE-3 | FC-2 | CVM-29 | BO-2 | - | - |
| NAE-8 | N2-1 | VMA-21 | BI-3 | - | - | - | NAE-3 | FC-2 | CVM-29 | BO-3 | - | - |
| | | | | | | | NAE-3 | FC-2 | CVM-29 | CO-1 | - | - |

**B3 VAV-A8-1 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

NOTE: Existing Zone Sensor is Metastat with RJ-45 connection. Provide new zone sensor for this controller.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-8 | N2-1 | UNT-200 | AI-1 | ZN-T | FCU Zone Temp | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | UI-1 | ZN-T | FCU Zone Temp |
| NAE-8 | N2-1 | UNT-200 | AI-2 | ZNT-SP | FCU Zone Temp Setpoint | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | UI-2 | ZNT-SP | FCU Zone Temp Setpoint |
| NAE-8 | N2-1 | UNT-200 | AI-3 | DA-T | FCU Discharge Temp | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | UI-3 | DA-T | FCU Discharge Temp |
| NAE-8 | N2-1 | UNT-200 | AI-4 | - | - | - | NAE-5 | FC-1 | CGM-74 | UI-4 | - | - |
| NAE-8 | N2-1 | UNT-200 | AI-5 | - | - | - | NAE-5 | FC-1 | CGM-74 | UI-5 | SF-S | FCU Supply Fan Status |
| NAE-8 | N2-1 | UNT-200 | AI-6 | - | - | - | NAE-5 | FC-1 | CGM-74 | UI-6 | EF1-S | Exh Fan 1 Fan Status |
| NAE-8 | N2-1 | UNT-200 | BI-1 | SF-S | FCU Supply Fan Status | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | UI-7 | EF2-S | Exh Fan 2 Fan Status |
| NAE-8 | N2-1 | UNT-200 | BI-2 | EF1-S | Exh Fan 1 Fan Status | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | BI-1 | EF1-DprS | Exh Fan 1 Damper Status |
| NAE-8 | N2-1 | UNT-200 | BI-3 | EF1-DprS | Exh Fan 1 Damper Status | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | BI-2 | EF2-DprS | Exh Fan 2 Damper Status |
| NAE-8 | N2-1 | UNT-200 | BI-4 | EF2-S | Exh Fan 2 Fan Status | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | BO-1 | SF-C | FCU Supply Fan Command |
| NAE-8 | N2-1 | UNT-200 | BI-5 | - | - | - | NAE-5 | FC-1 | CGM-74 | BO-2 | EF1-C | Exh Fan 1 Fan Command |
| NAE-8 | N2-1 | UNT-200 | BI-6 | EF2-DprS | Exh Fan 2 Damper Status | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | BO-3 | EF1-DprC | Exh Fan 1 Damper Command |
| NAE-8 | N2-1 | UNT-200 | AO-1 | HTG-O | FCU Heating Valve Control | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | CO-1 | EF2-C | Exh Fan 2 Fan Command |
| NAE-8 | N2-1 | UNT-200 | AO-2 | - | - | - | NAE-5 | FC-1 | CGM-74 | CO-2 | EF2-DprC | Exh Fan 2 Damper Command |
| NAE-8 | N2-1 | UNT-200 | BO-1 | SF-C | FCU Supply Fan Command | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | CO-3 | - | - |
| NAE-8 | N2-1 | UNT-200 | BO-2 | EF1-C | Exh Fan 1 Fan Command | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | CO-4 | - | - |
| NAE-8 | N2-1 | UNT-200 | BO-3 | EF1-DprC | Exh Fan 1 Damper Command | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | AO-1 | HTG-O | FCU Heating Valve Control |
| NAE-8 | N2-1 | UNT-200 | BO-4 | EF2-C | Exh Fan 2 Fan Command | Move to new controller CGM-74 | NAE-5 | FC-1 | CGM-74 | AO-2 | - | - |
| NAE-8 | N2-1 | UNT-200 | BO-5 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-200 | BO-6 | EF2-DprC | Exh Fan 2 Damper Command | Move to new controller CGM-74 | | | | | | |

**B3 D-Bay Commons Bathroom FCU Control**

**Start/Stop Control**
During occupied hours the FCU fan will run continuously and during unoccupied hours the fan will be off.
**Temperature Control**
Modulate heating valve maintain FCU zone temperature to its adjustable setpoint.
**Exhaust Fan Control**
During occupied hours, command the exhaust fan(s) damper to open. When damper status is confirmed, start the fan(s). During unoccupied hours the fan(s) shall be off.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-3 | N2-1 | DX-7 | AI-1 | RA-T | Return Air Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | UI-1 | RA-T | Return Air Temp |
| NAE-3 | N2-1 | DX-7 | AI-2 | MA-T | Mixed Air Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | UI-2 | MA-T | Mixed Air Temp |
| NAE-3 | N2-1 | DX-7 | AI-3 | CLG-T | Cold Deck Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | UI-3 | CLG-T | Cold Deck Temp |
| NAE-3 | N2-1 | DX-7 | AI-4 | HTG-T | Hot Deck Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | UI-4 | HTG-T | Hot Deck Temp |
| NAE-3 | N2-1 | DX-7 | AI-5 | ZN1-T | Zone 1 Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | UI-5 | RA-H | Return Air Humidity |
| NAE-3 | N2-1 | DX-7 | AI-6 | ZN2-T | Zone 2 Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | UI-6 | SF-S | Supply Fan Status |
| NAE-3 | N2-1 | DX-7 | AI-7 | ZN3-T | Zone 3 Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | UI-7 | LT-ALM | Low Temperature Alarm |
| NAE-3 | N2-1 | DX-7 | AI-8 | ZN4-T | Zone 4 Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | BI-1 | FILT-S | Prefilter Status |
| NAE-3 | N2-1 | DX-7 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | BI-2 | - | - |
| NAE-3 | N2-1 | DX-7 | DI-2 | LT-ALM | Low Temperature Alarm | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | BO-1 | SF-C | Supply Fan Command |
| NAE-3 | N2-1 | DX-7 | DI-3 | FILT-S | Prefilter Status | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | BO-2 | E-SDWN-C | Emergency Shutdown Command |
| NAE-3 | N2-1 | DX-7 | DI-4 | DA-SMK | Discharge Smoke Detector | Remove point and associated wiring | NAE-6 | FC-1 | CGM-29 | BO-3 | - | - |
| NAE-3 | N2-1 | DX-7 | DI-5 | RA-SMK | Return Smoke Detector | Remove point and associated wiring | NAE-6 | FC-1 | CGM-29 | CO-1 | OA-DPR | Outdoor Air Damper Control |
| NAE-3 | N2-1 | DX-7 | DI-6 | - | - | - | NAE-6 | FC-1 | CGM-29 | CO-2 | RA-DPR | Return Air Damper Control |
| NAE-3 | N2-1 | DX-7 | DI-7 | - | - | - | NAE-6 | FC-1 | CGM-29 | CO-3 | CLG-VLV | Cooling Valve Control |
| NAE-3 | N2-1 | DX-7 | DI-8 | - | - | - | NAE-6 | FC-1 | CGM-29 | CO-4 | HTG-VLV | Heating Valve Control |
| NAE-3 | N2-1 | DX-7 | AO-1 | OA-DPR | Outdoor Air Damper Control | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | AO-1 | - | - |
| NAE-3 | N2-1 | DX-7 | AO-2 | RA-DPR | Return Air Damper Control | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | AO-2 | - | - |
| NAE-3 | N2-1 | DX-7 | AO-9 | CLG-VLV | Cooling Valve Control | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 UI-1 | ZN1-T | Zone 1 Temp |
| NAE-3 | N2-1 | DX-7 | AO-10 | HTG-VLV | Heating Valve Control | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 UI-2 | ZN2-T | Zone 2 Temp |
| NAE-3 | N2-1 | DX-7 | AO-11 | ZN1-DPR | Zone 1 Damper Control | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 UI-3 | ZN3-T | Zone 3 Temp |
| NAE-3 | N2-1 | DX-7 | AO-12 | ZN2-DPR | Zone 2 Damper Control | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 UI-4 | ZN4-T | Zone 4 Temp |
| NAE-3 | N2-1 | DX-7 | AO-13 | ZN3-DPR | Zone 3 Damper Control | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 UI-5 | ZN5-T | Zone 5 Temp |
| NAE-3 | N2-1 | DX-7 | AO-14 | ZN4-DPR | Zone 4 Damper Control | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 UI-6 | - | - |
| NAE-3 | N2-1 | DX-7 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 UI-7 | - | - |
| NAE-3 | N2-1 | DX-7 | DO-4 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 BI-1 | - | - |
| NAE-3 | N2-1 | DX-7 | DO-5 | - | - | - | NAE-6 | FC-1 | CGM-29 | XPM1 BI-2 | - | - |
| NAE-3 | N2-1 | DX-7 | DO-6 | - | - | - | NAE-6 | FC-1 | CGM-29 | XPM1 BO-1 | - | - |
| NAE-3 | N2-1 | DX-7 | DO-7 | - | - | - | NAE-6 | FC-1 | CGM-29 | XPM1 BO-2 | - | - |
| NAE-3 | N2-1 | DX-7 | DO-8 | - | - | - | NAE-6 | FC-1 | CGM-29 | XPM1 BO-3 | - | - |
| NAE-3 | N2-1 | DX-7 | XT1AI1 | ZN5-T | Zone 5 Temp | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 CO-1 | ZN1-DPR | Zone 1 Damper Control |
| NAE-3 | N2-1 | DX-7 | XT1AI2 | RA-H | Return Air Humidity | Move to new controller CGM-29 | NAE-6 | FC-1 | CGM-29 | XPM1 CO-2 | ZN2-DPR | Zone 2 Damper Control |
| NAE-3 | N2-1 | DX-7 | XT1AI3 | - | - | - | NAE-6 | FC-1 | CGM-29 | XPM1 CO-3 | ZN3-DPR | Zone 3 Damper Control |
| NAE-3 | N2-1 | DX-7 | XT1AI4 | - | - | - | NAE-6 | FC-1 | CGM-29 | XPM1 CO-4 | ZN4-DPR | Zone 4 Damper Control |
| NAE-3 | N2-1 | DX-7 | XT1AI5 | - | - | - | NAE-6 | FC-1 | CGM-29 | XPM1 AO-1 | ZN5-DPR | Zone 5 Damper Control |
| NAE-3 | N2-1 | DX-7 | XT1AI6 | - | - | - | NAE-6 | FC-1 | CGM-29 | XPM1 AO-2 | - | - |
| NAE-3 | N2-1 | DX-7 | XT1AO1 | ZN5-DPR | Zone 5 Damper Control | Move to new controller CGM-29 | | | | | | |
| NAE-3 | N2-1 | DX-7 | XT1AO2 | - | - | - | | | | | | |

**B3 AHU-B-2 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Reset the cooling coil discharge temp setpoint based on maximum zone temperature between maximum (70 degF, adj.) and minimum (55 degF, adj.) values. Reset the heating coil discharge temp setpoint based on minimum zone temperature between maximum (140 degF, adj.) and minimum (70 degF, adj.) values. Modulate mixed air dampers to maintain the mixed air temperature to the calculated cooling coil discharge air setpoint. Modulate heating and cooling valves to maintain the respective coil discharge air temperature at its respective setpoint. Modulate zone dampers between heating and cooling to maintain each zone to its respective zone setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (55 degF adj.) control mixed air dampers to minimum position (25% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (45 degF, adj.), closing to less than minimum position if necessary.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-3 | N2-1 | DX-9 | AI-1 | MA-T | Mixed Air Temp | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | UI-1 | RA-T | Return Air Temp | |
| NAE-3 | N2-1 | DX-9 | AI-2 | DA-T | Discharge Air Temp | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | UI-2 | MA-T | Mixed Air Temp | |
| NAE-3 | N2-1 | DX-9 | AI-3 | ZN-T | Zone Tenp | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | UI-3 | CLG-T | Cold Deck Temp | |
| NAE-3 | N2-1 | DX-9 | AI-4 | RA-T | Return Air Temp | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | UI-4 | HTG-T | Hot Deck Temp | |
| NAE-3 | N2-1 | DX-9 | AI-5 | RA-H | Return Air Humidity | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | UI-5 | RA-H | Return Air Humidity | |
| NAE-3 | N2-1 | DX-9 | AI-6 | - | - | - | NAE-6 | FC-1 | CGM-30 | UI-6 | SF-S | Supply Fan Status | |
| NAE-3 | N2-1 | DX-9 | AI-7 | - | - | - | NAE-6 | FC-1 | CGM-30 | UI-7 | LT-ALM | Low Temperature Alarm | |
| NAE-3 | N2-1 | DX-9 | AI-8 | - | - | - | NAE-6 | FC-1 | CGM-30 | BI-1 | FILT-S | Prefilter Status | |
| NAE-3 | N2-1 | DX-9 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | BI-2 | - | - | |
| NAE-3 | N2-1 | DX-9 | DI-2 | LT-ALM | Low Temperature Alarm | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | BO-1 | SF-C | Supply Fan Command | |
| NAE-3 | N2-1 | DX-9 | DI-3 | FILT-S | Prefilter Status | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | BO-2 | E-SDWN-C | Emergency Shutdown Command | |
| NAE-3 | N2-1 | DX-9 | DI-4 | DA-SMK | Discharge Smoke Detector | Remove point and associated wiring | NAE-6 | FC-1 | CGM-30 | BO-3 | - | - | |
| NAE-3 | N2-1 | DX-9 | DI-5 | RA-SMK | Return Smoke Detector | Remove point and associated wiring | NAE-6 | FC-1 | CGM-30 | CO-1 | OA-DPR | Outdoor Air Damper Control | |
| NAE-3 | N2-1 | DX-9 | DI-6 | - | - | - | NAE-6 | FC-1 | CGM-30 | CO-2 | RA-DPR | Return Air Damper Control | |
| NAE-3 | N2-1 | DX-9 | DI-7 | - | - | - | NAE-6 | FC-1 | CGM-30 | CO-3 | CLG-VLV | Cooling Valve Control | |
| NAE-3 | N2-1 | DX-9 | DI-8 | - | - | - | NAE-6 | FC-1 | CGM-30 | CO-4 | HTG-VLV | Heating Valve Control | |
| NAE-3 | N2-1 | DX-9 | AO-1 | OA-DPR | Outdoor Air Damper Control | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | AO-1 | - | - | |
| NAE-3 | N2-1 | DX-9 | AO-2 | RA-DPR | Return Air Damper Control | Move to new controller CGM-30 | NAE-6 | FC-1 | CGM-30 | AO-2 | - | - | |
| NAE-3 | N2-1 | DX-9 | AO-9 | HTG-VLV | Heating Valve Control | Move to new controller CGM-30 | | | | | | | |
| NAE-3 | N2-1 | DX-9 | AO-10 | CLG-VLV | Cooling Valve Control | Move to new controller CGM-30 | | | | | | | |
| NAE-3 | N2-1 | DX-9 | AO-11 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-9 | AO-12 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-9 | AO-13 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-9 | AO-14 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-9 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-30 | | | | | | | |
| NAE-3 | N2-1 | DX-9 | DO-4 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-30 | | | | | | | |
| NAE-3 | N2-1 | DX-9 | DO-5 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-9 | DO-6 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-9 | DO-7 | - | - | - | | | | | | | |
| NAE-3 | N2-1 | DX-9 | DO-8 | - | - | - | | | | | | | |

**B3 AHU-B-3 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Calculate difference between zone temperature and zone temperature setpoint of area served by this AHU to control discharge air setpoint between maximum (75 degF, adj.) and minimum (53 degF, adj.) values. Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (55 degF, adj.), control mixed air dampers to minimum position (10% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (45 degF, adj.), closing to less than minimum position if necessary.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | DX-108 | AI-1 | RA-T | Return Air Temp | Move to new controller CGM-11 | NAE-7 | FC-2 | CGM-11 | UI-1 | RA-T | Return Air Temp |
| NAE-7 | N2-1 | DX-108 | AI-2 | DA-T | Discharge Air Temp | Move to new controller CGM-11 | NAE-7 | FC-2 | CGM-11 | UI-2 | DA-T | Discharge Air Temp |
| NAE-7 | N2-1 | DX-108 | AI-3 | - | - | - | NAE-7 | FC-2 | CGM-11 | UI-3 | - | - |
| NAE-7 | N2-1 | DX-108 | AI-4 | - | - | - | NAE-7 | FC-2 | CGM-11 | BI-1 | SF-S | Supply Fan Status |
| NAE-7 | N2-1 | DX-108 | AI-5 | - | - | - | NAE-7 | FC-2 | CGM-11 | BO-1 | SF-C | Supply Fan Command |
| NAE-7 | N2-1 | DX-108 | AI-6 | - | - | - | NAE-7 | FC-2 | CGM-11 | BO-2 | Clg-Cmd | DX Cooling Command |
| NAE-7 | N2-1 | DX-108 | AI-7 | - | - | - | NAE-7 | FC-2 | CGM-11 | CO-1 | Htg-Vlv | Heating Coil Valve Control |
| NAE-7 | N2-1 | DX-108 | AI-8 | - | - | - | NAE-7 | FC-2 | CGM-11 | CO-2 | - | - |
| NAE-7 | N2-1 | DX-108 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-11 | NAE-7 | FC-2 | CGM-11 | CO-3 | - | - |
| NAE-7 | N2-1 | DX-108 | DI-2 | - | - | - | NAE-7 | FC-2 | CGM-11 | CO-4 | - | - |
| NAE-7 | N2-1 | DX-108 | DI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DI-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DI-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DI-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DI-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DI-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | AO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | AO-2 | Htg-Vlv | Heating Coil Valve Control | Move to new controller CGM-11 | | | | | | |
| NAE-7 | N2-1 | DX-108 | AO-9 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | AO-10 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | AO-11 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | AO-12 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | AO-13 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | AO-14 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-11 | | | | | | |
| NAE-7 | N2-1 | DX-108 | DO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DO-5 | Clg-Cmd | DX Cooling Command | Move to new controller CGM-11 | | | | | | |
| NAE-7 | N2-1 | DX-108 | DO-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DO-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-108 | DO-8 | - | - | - | | | | | | |

**B106 AHU-RePro Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off.

**Temperature Control**

If the return air temperature goes above the occupied cooling setpoint (76 degF, adj.), command the cooling to come on. If the return air temperture goes below the occupied heating setpoint (68 degF, adj.), modulate the heating valve to maintain the heating setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-3 | N2-1 | DX-30 | AI-1 | RA-T | Return Air Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | UI-1 | RA-T | Return Air Temp |
| NAE-3 | N2-1 | DX-30 | AI-2 | MA-T | Mixed Air Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | UI-2 | MA-T | Mixed Air Temp |
| NAE-3 | N2-1 | DX-30 | AI-3 | CLG-T | Cold Deck Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | UI-3 | CLG-T | Cold Deck Temp |
| NAE-3 | N2-1 | DX-30 | AI-4 | HTG-T | Hot Deck Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | UI-4 | HTG-T | Hot Deck Temp |
| NAE-3 | N2-1 | DX-30 | AI-5 | RA-H | Return Air Humidity | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | UI-5 | RA-H | Return Air Humidity |
| NAE-3 | N2-1 | DX-30 | AI-6 | ZN1-T | Zone 1 Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | UI-6 | ZN1-T | Zone 1 Temp |
| NAE-3 | N2-1 | DX-30 | AI-7 | ZN2-T | Zone 2 Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | UI-7 | ZN2-T | Zone 2 Temp |
| NAE-3 | N2-1 | DX-30 | AI-8 | ZN3-T | Zone 3 Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | BI-1 | SF-S | Supply Fan Status |
| NAE-3 | N2-1 | DX-30 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | BI-2 | LT-ALM | Low Temperature Alarm |
| NAE-3 | N2-1 | DX-30 | DI-2 | LT-ALM | Low Temperature Alarm | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | BO-1 | SF-C | Supply Fan Command |
| NAE-3 | N2-1 | DX-30 | DI-3 | FILT-S | Prefilter Status | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | BO-2 | RF-C | Return Fan Command |
| NAE-3 | N2-1 | DX-30 | DI-4 | RF-S | Return Fan Status | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | BO-3 | - | - |
| NAE-3 | N2-1 | DX-30 | DI-5 | HWP-S | Heating Coil Pump Status | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | CO-1 | MA-DPR | Mixed Air Dampers Control |
| NAE-3 | N2-1 | DX-30 | DI-6 | CHWP-S | Cooling Coil Pump Status | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | CO-2 | CLG-VLV | Cooling Valve Control |
| NAE-3 | N2-1 | DX-30 | DI-7 | - | - | - | NAE-8 | FC-1 | CGM-5 | CO-3 | HTG-VLV | Heating Valve Control |
| NAE-3 | N2-1 | DX-30 | DI-8 | - | - | - | NAE-8 | FC-1 | CGM-5 | CO-4 | HUM-VLV | Humidifier Valve Control |
| NAE-3 | N2-1 | DX-30 | AO-1 | MA-DPR | Mixed Air Dampers Control | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | AO-1 | ZN1-DPR | Zone 1 Damper Control |
| NAE-3 | N2-1 | DX-30 | AO-2 | - | - | - | NAE-8 | FC-1 | CGM-5 | AO-2 | ZN2-DPR | Zone 2 Damper Control |
| NAE-3 | N2-1 | DX-30 | AO-9 | CLG-VLV | Cooling Valve Control | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 UI-1 | ZN3-T | Zone 3 Temp |
| NAE-3 | N2-1 | DX-30 | AO-10 | HTG-VLV | Heating Valve Control | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 UI-2 | ZN4-T | Zone 4 Temp |
| NAE-3 | N2-1 | DX-30 | AO-11 | HUM-VLV | Humidifier Valve Control | Remove point and associated wiring | NAE-8 | FC-1 | CGM-5 | XPM1 UI-3 | ZN5-T | Zone 5 Temp |
| NAE-3 | N2-1 | DX-30 | AO-12 | ZN1-DPR | Zone 1 Damper Control | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 UI-4 | ZN6-T | Zone 6 Temp |
| NAE-3 | N2-1 | DX-30 | AO-13 | ZN2-DPR | Zone 2 Damper Control | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 UI-5 | ZN7-T | Zone 7 Temp |
| NAE-3 | N2-1 | DX-30 | AO-14 | ZN3-DPR | Zone 3 Damper Control | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 UI-6 | FILT-S | Prefilter Status |
| NAE-3 | N2-1 | DX-30 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 UI-7 | RF-S | Return Fan Status |
| NAE-3 | N2-1 | DX-30 | DO-4 | RF-C | Return Fan Command | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 BI-1 | HWP-S | Heating Coil Pump Status |
| NAE-3 | N2-1 | DX-30 | DO-5 | HWP-C | Heating Coil Pump Command | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 BI-2 | CHWP-S | Cooling Coil Pump Status |
| NAE-3 | N2-1 | DX-30 | DO-6 | CHWP-C | Cooling Coil Pump Command | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 BO-1 | HWP-C | Heating Coil Pump Command |
| NAE-3 | N2-1 | DX-30 | DO-7 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 BO-2 | CHWP-C | Cooling Coil Pump Command |
| NAE-3 | N2-1 | DX-30 | DO-8 | - | - | - | NAE-8 | FC-1 | CGM-5 | XPM1 BO-3 | E-SDWN-C | Emergency Shutdown Command |
| NAE-3 | N2-1 | UNT-31 | AI-1 | ZN4-T | Zone 4 Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 CO-1 | ZN3-DPR | Zone 3 Damper Control |
| NAE-3 | N2-1 | UNT-31 | AI-2 | ZN5-T | Zone 5 Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 CO-2 | ZN4-DPR | Zone 4 Damper Control |
| NAE-3 | N2-1 | UNT-31 | AI-3 | ZN6-T | Zone 6 Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 CO-3 | ZN5-DPR | Zone 5 Damper Control |
| NAE-3 | N2-1 | UNT-31 | AI-4 | ZN7-T | Zone 7 Temp | Move to new controller CGM-5 | NAE-8 | FC-1 | CGM-5 | XPM1 CO-4 | ZN6-DPR | Zone 6 Damper Control |
| NAE-3 | N2-1 | UNT-31 | AI-5 | - | - | - | NAE-8 | FC-1 | CGM-5 | XPM1 AO-1 | ZN7-DPR | Zone 7 Damper Control |
| NAE-3 | N2-1 | UNT-31 | AI-6 | - | - | - | NAE-8 | FC-1 | CGM-5 | XPM1 AO-2 | - | - |
| NAE-3 | N2-1 | UNT-31 | AO-1 | ZN4-DPR | Zone 4 Damper Control | Move to new controller CGM-5 | | | | | | |
| NAE-3 | N2-1 | UNT-31 | AO-2 | ZN5-DPR | Zone 5 Damper Control | Move to new controller CGM-5 | | | | | | |
| NAE-3 | N2-1 | UNT-31 | AO-3 | ZN6-DPR | Zone 6 Damper Control | Move to new controller CGM-5 | | | | | | |
| NAE-3 | N2-1 | UNT-31 | AO-4 | ZN7-DPR | Zone 7 Damper Control | Move to new controller CGM-5 | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BI-1 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BI-2 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BI-3 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BI-4 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BI-5 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BI-6 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BO-1 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BO-2 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BO-3 | - | - | - | | | | | | |
| NAE-3 | N2-1 | UNT-31 | BO-4 | - | - | - | | | | | | |

**B3 AHU-C-4 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Reset the cooling coil discharge temp setpoint based on maximum zone temperature between maximum (70 degF, adj.) and minimum (55 degF, adj.) values. Reset the heating coil discharge temp setpoint based on minimum zone temperature between maximum (100 degF, adj.) and minimum (70 degF, adj.) values. Modulate mixed air dampers to maintain the mixed air temperature to the calculated cooling coil discharge air setpoint. Modulate heating and cooling valves to maintain the respective coil discharge air temperature at its respective setpoint. Modulate zone dampers between heating and cooling to maintain each zone to its respective zone setpoint. If outdoor air dry bulb temperature goes above the return air temperature, control mixed air dampers to minimum position (25% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (45 degF, adj.), closing to less than minimum position if necessary. Run each coil pump whenever their respective valve is open, when the outdoor air temperature is below the freeze protection setpoint (40 degF, adj.), or if the low temperature alarm is active.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-21 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-38 | NAE-12 | FC-2 | CVM-38 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-21 | AI-2 | WC-Adj | Remote Adjust | Move to new controller CVM-38 | NAE-12 | FC-2 | CVM-38 | UI-2 | WC-Adj | Remote Adjust |
| NAE-7 | N2-1 | VMA-21 | AI-3 | - | - | - | NAE-12 | FC-2 | CVM-38 | UI-3 | - | - |
| NAE-7 | N2-1 | VMA-21 | AI-4 | - | - | - | NAE-12 | FC-2 | CVM-38 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-21 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-38 | NAE-12 | FC-2 | CVM-38 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-21 | AO-1 | BBHTG-O | Suppl Heating Command | Move to new controller CVM-38 | NAE-12 | FC-2 | CVM-38 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-21 | AO-2 | - | - | - | NAE-12 | FC-2 | CVM-38 | CO-1 | BBHTG-O | Suppl Heating Command |
| NAE-7 | N2-1 | VMA-21 | BI-1 | - | - | - | NAE-12 | FC-2 | CVM-38 | CO-2 | - | - |
| NAE-7 | N2-1 | VMA-21 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-21 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-21 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-21 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-21 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-21 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-21 | BO-5 | - | - | - | | | | | | |

**B106 VAV-E-2b-2 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

NOTE: Existing Zone Sensor is Metastat with RJ-45 connection. Provide new zone sensor for this controller.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-22 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-39 | NAE-12 | FC-2 | CVM-39 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-22 | AI-2 | WC-Adj | Remote Adjust | Move to new controller CVM-39 | NAE-12 | FC-2 | CVM-39 | UI-2 | WC-Adj | Remote Adjust |
| NAE-7 | N2-1 | VMA-22 | AI-3 | - | - | - | NAE-12 | FC-2 | CVM-39 | UI-3 | W2F-SW-T | Rm W2F(SW) FTR Temp |
| NAE-7 | N2-1 | VMA-22 | AI-4 | W2F-SW-T | Rm W2F(SW) FTR Temp | Move to new controller CVM-39 | NAE-12 | FC-2 | CVM-39 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-22 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-39 | NAE-12 | FC-2 | CVM-39 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-22 | AO-1 | BBHTG-O | Suppl Heating Command | Move to new controller CVM-39 | NAE-12 | FC-2 | CVM-39 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-22 | AO-2 | W2F-SW-V | Rm W2F(SW) FTR Valve | Move to new controller CVM-39 | NAE-12 | FC-2 | CVM-39 | CO-1 | BBHTG-O | Suppl Heating Command |
| NAE-7 | N2-1 | VMA-22 | BI-1 | - | - | - | NAE-12 | FC-2 | CVM-39 | CO-2 | W2F-SW-V | Rm W2F(SW) FTR Valve |
| NAE-7 | N2-1 | VMA-22 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-22 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-22 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-22 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-22 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-22 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-22 | BO-5 | - | - | - | | | | | | |

**B106 VAV-E-2b-1 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

NOTE: Existing Zone Sensor is Metastat with RJ-45 connection. Provide new zone sensor for this controller.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-23 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-40 | NAE-12 | FC-2 | CVM-40 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-23 | AI-2 | WC-Adj | Remote Adjust | Move to new controller CVM-40 | NAE-12 | FC-2 | CVM-40 | UI-2 | WC-Adj | Remote Adjust |
| NAE-7 | N2-1 | VMA-23 | AI-3 | - | - | - | NAE-12 | FC-2 | CVM-40 | UI-3 | W2G-SW-T | Rm W2G(SW) FTR Temp |
| NAE-7 | N2-1 | VMA-23 | AI-4 | W2G-SW-T | Rm W2G(SW) FTR Temp | Move to new controller CVM-40 | NAE-12 | FC-2 | CVM-40 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-23 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-40 | NAE-12 | FC-2 | CVM-40 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-23 | AO-1 | BBHTG-O | Suppl Heating Command | Move to new controller CVM-40 | NAE-12 | FC-2 | CVM-40 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-23 | AO-2 | W2G-SW-V | Rm W2G(SW) FTR Valve | Move to new controller CVM-40 | NAE-12 | FC-2 | CVM-40 | CO-1 | BBHTG-O | Suppl Heating Command |
| NAE-7 | N2-1 | VMA-23 | BI-1 | - | - | - | NAE-12 | FC-2 | CVM-40 | CO-2 | W2G-SW-V | Rm W2G(SW) FTR Valve |
| NAE-7 | N2-1 | VMA-23 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-23 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-23 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-23 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-23 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-23 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-23 | BO-5 | - | - | - | | | | | | |

**B106 VAV-E-2b-3 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

NOTE: Existing Zone Sensor is Metastat with RJ-45 connection. Provide new zone sensor for this controller.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-24 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-41 | NAE-12 | FC-2 | CVM-41 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-24 | AI-2 | WC-Adj | Remote Adjust | Move to new controller CVM-41 | NAE-12 | FC-2 | CVM-41 | UI-2 | WC-Adj | Remote Adjust |
| NAE-7 | N2-1 | VMA-24 | AI-3 | - | - | - | NAE-12 | FC-2 | CVM-41 | UI-3 | W2G-NE-T | Rm W2G(NE) FTR Temp |
| NAE-7 | N2-1 | VMA-24 | AI-4 | W2G-NE-T | Rm W2G(NE) FTR Temp | Move to new controller CVM-41 | NAE-12 | FC-2 | CVM-41 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-24 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-41 | NAE-12 | FC-2 | CVM-41 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-24 | AO-1 | BBHTG-O | Suppl Heating Command | Move to new controller CVM-41 | NAE-12 | FC-2 | CVM-41 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-24 | AO-2 | W2G-NE-V | Rm W2G(NE) FTR Valve | Move to new controller CVM-41 | NAE-12 | FC-2 | CVM-41 | CO-1 | BBHTG-O | Suppl Heating Command |
| NAE-7 | N2-1 | VMA-24 | BI-1 | - | - | - | NAE-12 | FC-2 | CVM-41 | CO-2 | W2G-NE-V | Rm W2G(NE) FTR Valve |
| NAE-7 | N2-1 | VMA-24 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-24 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-24 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-24 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-24 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-24 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-24 | BO-5 | - | - | - | | | | | | |

**B106 VAV-E-2a-2 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

NOTE: Existing Zone Sensor is Metastat with RJ-45 connection. Provide new zone sensor for this controller.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-25 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-42 | NAE-12 | FC-2 | CVM-42 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-25 | AI-2 | WC-Adj | Remote Adjust | Move to new controller CVM-42 | NAE-12 | FC-2 | CVM-42 | UI-2 | WC-Adj | Remote Adjust |
| NAE-7 | N2-1 | VMA-25 | AI-3 | - | - | - | NAE-12 | FC-2 | CVM-42 | UI-3 | W2F-NE-T | Rm W2F(NE) FTR Temp |
| NAE-7 | N2-1 | VMA-25 | AI-4 | W2F-NE-T | Rm W2F(NE) FTR Temp | Move to new controller CVM-42 | NAE-12 | FC-2 | CVM-42 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-25 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-42 | NAE-12 | FC-2 | CVM-42 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-25 | AO-1 | BBHTG-O | Suppl Heating Command | Move to new controller CVM-42 | NAE-12 | FC-2 | CVM-42 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-25 | AO-2 | W2F-NE-V | Rm W2F(NE) FTR Valve | Move to new controller CVM-42 | NAE-12 | FC-2 | CVM-42 | CO-1 | BBHTG-O | Suppl Heating Command |
| NAE-7 | N2-1 | VMA-25 | BI-1 | - | - | - | NAE-12 | FC-2 | CVM-42 | CO-2 | W2F-NE-V | Rm W2F(NE) FTR Valve |
| NAE-7 | N2-1 | VMA-25 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-25 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-25 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-25 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-25 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-25 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-25 | BO-5 | - | - | - | | | | | | |

**B106 VAV-E-2a-1 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

NOTE: Existing Zone Sensor is Metastat with RJ-45 connection. Provide new zone sensor for this controller.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-7 | N2-1 | UNT-26 | AI-1 | W2B-T | Room W2B FTR Zone Temp | Move to new controller CGM-43 | NAE-12 | FC-2 | CGM-43 | UI-1 | W2B-T | Room W2B FTR Zone Temp | |
| NAE-7 | N2-1 | UNT-26 | AI-2 | W2A-T | Room W2A FTR Zone Temp | Move to new controller CGM-43 | NAE-12 | FC-2 | CGM-43 | UI-2 | W2A-T | Room W2A FTR Zone Temp | |
| NAE-7 | N2-1 | UNT-26 | AI-3 | W2C-T | Room W2C FTR Zone Temp | Move to new controller CGM-43 | NAE-12 | FC-2 | CGM-43 | UI-3 | W2C-T | Room W2C FTR Zone Temp | |
| NAE-7 | N2-1 | UNT-26 | AI-4 | Str11-T | Stair 11 FTR Zone Temp | Move to new controller CGM-43 | NAE-12 | FC-2 | CGM-43 | UI-4 | Str11-T | Stair 11 FTR Zone Temp | |
| NAE-7 | N2-1 | UNT-26 | AI-5 | - | - | - | NAE-12 | FC-2 | CGM-43 | UI-5 | - | - | |
| NAE-7 | N2-1 | UNT-26 | AI-6 | - | - | - | NAE-12 | FC-2 | CGM-43 | UI-6 | - | - | |
| NAE-7 | N2-1 | UNT-26 | AO-1 | W2B-Vlv | Room W2B FTR Valve Control | Move to new controller CGM-43 | NAE-12 | FC-2 | CGM-43 | UI-7 | - | - | |
| NAE-7 | N2-1 | UNT-26 | AO-2 | W2A-Vlv | Room W2A FTR Valve Control | Move to new controller CGM-43 | NAE-12 | FC-2 | CGM-43 | BI-1 | - | - | |
| NAE-7 | N2-1 | UNT-26 | AO-3 | W2C-Vlv | Room W2C FTR Valve Control | Move to new controller CGM-43 | NAE-12 | FC-2 | CGM-43 | BI-2 | - | - | |
| NAE-7 | N2-1 | UNT-26 | AO-4 | Str11-Vlv | Stair 11 FTR Valve Control | Move to new controller CGM-43 | NAE-12 | FC-2 | CGM-43 | BO-1 | - | - | |
| NAE-7 | N2-1 | UNT-26 | BI-1 | - | - | - | NAE-12 | FC-2 | CGM-43 | BO-2 | - | - | |
| NAE-7 | N2-1 | UNT-26 | BI-2 | - | - | - | NAE-12 | FC-2 | CGM-43 | BO-3 | - | - | |
| NAE-7 | N2-1 | UNT-26 | BI-3 | - | - | - | NAE-12 | FC-2 | CGM-43 | CO-1 | W2B-Vlv | Room W2B FTR Valve Control | |
| NAE-7 | N2-1 | UNT-26 | BI-4 | - | - | - | NAE-12 | FC-2 | CGM-43 | CO-2 | W2A-Vlv | Room W2A FTR Valve Control | |
| NAE-7 | N2-1 | UNT-26 | BI-5 | - | - | - | NAE-12 | FC-2 | CGM-43 | CO-3 | W2C-Vlv | Room W2C FTR Valve Control | |
| NAE-7 | N2-1 | UNT-26 | BI-6 | - | - | - | NAE-12 | FC-2 | CGM-43 | CO-4 | Str11-Vlv | Stair 11 FTR Valve Control | |
| NAE-7 | N2-1 | UNT-26 | BO-1 | - | - | - | NAE-12 | FC-2 | CGM-43 | AO-1 | - | - | |
| NAE-7 | N2-1 | UNT-26 | BO-2 | - | - | - | NAE-12 | FC-2 | CGM-43 | AO-2 | - | - | |
| NAE-7 | N2-1 | UNT-26 | BO-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | UNT-26 | BO-4 | - | - | - | | | | | | | |

**B106 Perimeter Heat Control**

**Temperature Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-7 | N2-1 | UNT-27 | AI-1 | W2K-T | Room W2K FTR Zone Temp | Move to new controller CGM-44 | NAE-12 | FC-2 | CGM-44 | UI-1 | W2K-T | Room W2K FTR Zone Temp | |
| NAE-7 | N2-1 | UNT-27 | AI-2 | W2J-T | Room W2J FTR Zone Temp | Move to new controller CGM-44 | NAE-12 | FC-2 | CGM-44 | UI-2 | W2J-T | Room W2J FTR Zone Temp | |
| NAE-7 | N2-1 | UNT-27 | AI-3 | W2i-T | Room W2i FTR Zone Temp | Move to new controller CGM-44 | NAE-12 | FC-2 | CGM-44 | UI-3 | W2i-T | Room W2i FTR Zone Temp | |
| NAE-7 | N2-1 | UNT-27 | AI-4 | W2H-T | Room W2H FTR Zone Temp | Move to new controller CGM-44 | NAE-12 | FC-2 | CGM-44 | UI-4 | W2H-T | Room W2H FTR Zone Temp | |
| NAE-7 | N2-1 | UNT-27 | AI-5 | - | - | - | NAE-12 | FC-2 | CGM-44 | UI-5 | - | - | |
| NAE-7 | N2-1 | UNT-27 | AI-6 | - | - | - | NAE-12 | FC-2 | CGM-44 | UI-6 | - | - | |
| NAE-7 | N2-1 | UNT-27 | AO-1 | W2K-Vlv | Room W2K FTR Valve Control | Move to new controller CGM-44 | NAE-12 | FC-2 | CGM-44 | UI-7 | - | - | |
| NAE-7 | N2-1 | UNT-27 | AO-2 | W2J-Vlv | Room W2J FTR Valve Control | Move to new controller CGM-44 | NAE-12 | FC-2 | CGM-44 | BI-1 | - | - | |
| NAE-7 | N2-1 | UNT-27 | AO-3 | W2i-Vlv | Room W2i FTR Valve Control | Move to new controller CGM-44 | NAE-12 | FC-2 | CGM-44 | BI-2 | - | - | |
| NAE-7 | N2-1 | UNT-27 | AO-4 | W2H-Vlv | Room W2H FTR Valve Control | Move to new controller CGM-44 | NAE-12 | FC-2 | CGM-44 | BO-1 | - | - | |
| NAE-7 | N2-1 | UNT-27 | BI-1 | - | - | - | NAE-12 | FC-2 | CGM-44 | BO-2 | - | - | |
| NAE-7 | N2-1 | UNT-27 | BI-2 | - | - | - | NAE-12 | FC-2 | CGM-44 | BO-3 | - | - | |
| NAE-7 | N2-1 | UNT-27 | BI-3 | - | - | - | NAE-12 | FC-2 | CGM-44 | CO-1 | W2K-Vlv | Room W2K FTR Valve Control | |
| NAE-7 | N2-1 | UNT-27 | BI-4 | - | - | - | NAE-12 | FC-2 | CGM-44 | CO-2 | W2J-Vlv | Room W2J FTR Valve Control | |
| NAE-7 | N2-1 | UNT-27 | BI-5 | - | - | - | NAE-12 | FC-2 | CGM-44 | CO-3 | W2i-Vlv | Room W2i FTR Valve Control | |
| NAE-7 | N2-1 | UNT-27 | BI-6 | - | - | - | NAE-12 | FC-2 | CGM-44 | CO-4 | W2H-Vlv | Room W2H FTR Valve Control | |
| NAE-7 | N2-1 | UNT-27 | BO-1 | - | - | - | NAE-12 | FC-2 | CGM-44 | AO-1 | - | - | |
| NAE-7 | N2-1 | UNT-27 | BO-2 | - | - | - | NAE-12 | FC-2 | CGM-44 | AO-2 | - | - | |
| NAE-7 | N2-1 | UNT-27 | BO-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | UNT-27 | BO-4 | - | - | - | | | | | | | |

**B106 Perimeter Heat Control**

**Temperature Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | DX-201 | AI-1 | B241-T | Room B241 FTR Zone Temp | Move to new controller CGM-45 | NAE-12 | FC-2 | CGM-45 | UI-1 | B241-T | Room B241 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AI-2 | C240-T | Room C240 FTR Zone Temp | Move to new controller CGM-45 | NAE-12 | FC-2 | CGM-45 | UI-2 | C240-T | Room C240 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AI-3 | - | - | - | NAE-12 | FC-2 | CGM-45 | UI-3 | Str1-T | Stair 1 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AI-4 | - | - | - | NAE-12 | FC-2 | CGM-45 | UI-4 | O200-T | Room O200 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AI-5 | - | - | - | NAE-12 | FC-2 | CGM-45 | UI-5 | B204-T | Room B204 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AI-6 | - | - | - | NAE-12 | FC-2 | CGM-45 | UI-6 | B206-T | Room B206 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AI-7 | - | - | - | NAE-12 | FC-2 | CGM-45 | UI-7 | - | - |
| NAE-7 | N2-1 | DX-201 | AI-8 | - | - | - | NAE-12 | FC-2 | CGM-45 | BI-1 | - | - |
| NAE-7 | N2-1 | DX-201 | DI-1 | - | - | - | NAE-12 | FC-2 | CGM-45 | BI-2 | - | - |
| NAE-7 | N2-1 | DX-201 | DI-2 | - | - | - | NAE-12 | FC-2 | CGM-45 | BO-1 | - | - |
| NAE-7 | N2-1 | DX-201 | DI-3 | - | - | - | NAE-12 | FC-2 | CGM-45 | BO-2 | - | - |
| NAE-7 | N2-1 | DX-201 | DI-4 | - | - | - | NAE-12 | FC-2 | CGM-45 | BO-3 | - | - |
| NAE-7 | N2-1 | DX-201 | DI-5 | - | - | - | NAE-12 | FC-2 | CGM-45 | CO-1 | B241-Vlv | Room B241 FTR Valve Control |
| NAE-7 | N2-1 | DX-201 | DI-6 | - | - | - | NAE-12 | FC-2 | CGM-45 | CO-2 | C240-Vlv | Room C240 FTR Valve Control |
| NAE-7 | N2-1 | DX-201 | DI-7 | - | - | - | NAE-12 | FC-2 | CGM-45 | CO-3 | Str1-Vlv | Stair 1 FTR Valve Control |
| NAE-7 | N2-1 | DX-201 | DI-8 | - | - | - | NAE-12 | FC-2 | CGM-45 | CO-4 | O200-Vlv | Room O200 FTR Valve Control |
| NAE-7 | N2-1 | DX-201 | AO-1 | B241-Vlv | Room B241 FTR Valve Control | Move to new controller CGM-45 | NAE-12 | FC-2 | CGM-45 | AO-1 | B204-Vlv | Room B204 FTR Valve Control |
| NAE-7 | N2-1 | DX-201 | AO-2 | C240-Vlv | Room C240 FTR Valve Control | Move to new controller CGM-45 | NAE-12 | FC-2 | CGM-45 | AO-2 | B206-Vlv | Room B206 FTR Valve Control |
| NAE-7 | N2-1 | DX-201 | AO-9 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 UI-1 | B208-T | Room B208 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AO-10 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 UI-2 | B210-T | Room B210 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AO-11 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 UI-3 | B212-T | Room B212 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AO-12 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 UI-4 | B218-T | Room B218 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AO-13 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 UI-5 | B220-T | Room B220 FTR Zone Temp |
| NAE-7 | N2-1 | DX-201 | AO-14 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 UI-6 | - | - |
| NAE-7 | N2-1 | DX-201 | DO-3 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 UI-7 | - | - |
| NAE-7 | N2-1 | DX-201 | DO-4 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 BI-1 | - | - |
| NAE-7 | N2-1 | DX-201 | DO-5 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 BI-2 | - | - |
| NAE-7 | N2-1 | DX-201 | DO-6 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 BO-1 | - | - |
| NAE-7 | N2-1 | DX-201 | DO-7 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 BO-2 | - | - |
| NAE-7 | N2-1 | DX-201 | DO-8 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 BO-3 | - | - |
| NAE-7 | N2-1 | DX-202 | AI-1 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 CO-1 | B208-Vlv | Room B208 FTR Valve Control |
| NAE-7 | N2-1 | DX-202 | AI-2 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 CO-2 | B210-Vlv | Room B210 FTR Valve Control |
| NAE-7 | N2-1 | DX-202 | AI-3 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 CO-3 | B212-Vlv | Room B212 FTR Valve Control |
| NAE-7 | N2-1 | DX-202 | AI-4 | Str1-T | Stair 1 FTR Zone Temp | Move to new controller CGM-45 | NAE-12 | FC-2 | CGM-45 | XPM1 CO-4 | B218-Vlv | Room B218 FTR Valve Control |
| NAE-7 | N2-1 | DX-202 | AI-5 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 AO-1 | B220-Vlv | Room B220 FTR Valve Control |
| NAE-7 | N2-1 | DX-202 | AI-6 | - | - | - | NAE-12 | FC-2 | CGM-45 | XPM1 AO-2 | - | - |
| NAE-7 | N2-1 | DX-202 | AI-7 | O200-T | Room O200 FTR Zone Temp | Move to new controller CGM-45 | | | | | | |
| NAE-7 | N2-1 | DX-202 | AI-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DI-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DI-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DI-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DI-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DI-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DI-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | AO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | AO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | AO-9 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | AO-10 | Str1-Vlv | Stair 1 FTR Valve Control | Move to new controller CGM-45 | | | | | | |
| NAE-7 | N2-1 | DX-202 | AO-11 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | AO-12 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | AO-13 | O200-Vlv | Room O200 FTR Valve Control | Move to new controller CGM-45 | | | | | | |
| NAE-7 | N2-1 | DX-202 | AO-14 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DO-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DO-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DO-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-202 | DO-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-203 | AI-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-203 | AI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-203 | AI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-203 | AI-4 | B204-T | Room B204 FTR Zone Temp | Move to new controller CGM-45 | | | | | | |
| NAE-7 | N2-1 | DX-203 | AI-5 | B206-T | Room B206 FTR Zone Temp | Move to new controller CGM-45 | | | | | | |
| NAE-7 | N2-1 | DX-203 | AI-6 | B208-T | Room B208 FTR Zone Temp | Move to new controller CGM-45 | | | | | | |
| NAE-7 | N2-1 | DX-203 | AI-7 | B210-T | Room B210 FTR Zone Temp | Move to new controller CGM-45 | | | | | | |

**B106 Perimeter Heat Control**

**Temperature Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE-7 | N2-1 | DX-203 | AI-8 | B212-T | Room B212 FTR Zone Temp | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DI-1 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DI-2 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DI-3 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DI-4 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DI-5 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DI-6 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DI-7 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DI-8 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | AO-1 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | AO-2 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | AO-9 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | AO-10 | B204-Vlv | Room B204 FTR Valve Control | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | AO-11 | B206-Vlv | Room B206 FTR Valve Control | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | AO-12 | B208-Vlv | Room B208 FTR Valve Control | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | AO-13 | B210-Vlv | Room B210 FTR Valve Control | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | AO-14 | B212-Vlv | Room B212 FTR Valve Control | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DO-3 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DO-4 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DO-5 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DO-6 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DO-7 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-203 | DO-8 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AI-1 | B218-T | Room B218 FTR Zone Temp | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AI-2 | B220-T | Room B220 FTR Zone Temp | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AI-3 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AI-4 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AI-5 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AI-6 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AI-7 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AI-8 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DI-1 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DI-2 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DI-3 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DI-4 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DI-5 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DI-6 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DI-7 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DI-8 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AO-1 | B218-Vlv | Room B218 FTR Valve Control | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AO-2 | B220-Vlv | Room B220 FTR Valve Control | Move to new controller CGM-45 | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AO-9 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AO-10 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AO-11 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AO-12 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AO-13 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | AO-14 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DO-3 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DO-4 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DO-5 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DO-6 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DO-7 | - | - | - | | | | | | | | | | | | | | | | | | |
| NAE-7 | N2-1 | DX-204 | DO-8 | - | - | - | | | | | | | | | | | | | | | | | | |

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-8 | N2-1 | DX-14 | AI-1 | RA-T | Return Air Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | UI-1 | RA-T | Return Air Temp |
| NAE-8 | N2-1 | DX-14 | AI-2 | MA-T | Mixed Air Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | UI-2 | MA-T | Mixed Air Temp |
| NAE-8 | N2-1 | DX-14 | AI-3 | CLG-T | Cooling Coil Discharge Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | UI-3 | CLG-T | Cooling Coil Discharge Temp |
| NAE-8 | N2-1 | DX-14 | AI-4 | HTG-T | Heating Coil Discharge Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | UI-4 | HTG-T | Heating Coil Discharge Temp |
| NAE-8 | N2-1 | DX-14 | AI-5 | RA-H | Return Air Humidity | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | UI-5 | RA-H | Return Air Humidity |
| NAE-8 | N2-1 | DX-14 | AI-6 | ZN1-T | Zone 1 Temp | Remove point and associated wiring | NAE-13 | FC-1 | CGM-8 | UI-6 | - | - |
| NAE-8 | N2-1 | DX-14 | AI-7 | ZN2-T | Zone 2 Temp | Remove point and associated wiring | NAE-13 | FC-1 | CGM-8 | UI-7 | SF-S | Supply Fan Status |
| NAE-8 | N2-1 | DX-14 | AI-8 | ZN3-T | Zone 3 Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | BI-1 | LT-ALM | Low Temp Alarm |
| NAE-8 | N2-1 | DX-14 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | BI-2 | FILT-S | Prefilter Status |
| NAE-8 | N2-1 | DX-14 | DI-2 | LT-ALM | Low Temp Alarm | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | BO-1 | SF-C | Supply Fan Command |
| NAE-8 | N2-1 | DX-14 | DI-3 | FILT-S | Prefilter Status | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | BO-2 | E-SDWN-C | Emergency Shutdown Command |
| NAE-8 | N2-1 | DX-14 | DI-4 | - | - | - | NAE-13 | FC-1 | CGM-8 | BO-3 | - | - |
| NAE-8 | N2-1 | DX-14 | DI-5 | - | - | - | NAE-13 | FC-1 | CGM-8 | CO-1 | OA-DPR | Outdoor Air Damper Control |
| NAE-8 | N2-1 | DX-14 | DI-6 | - | - | - | NAE-13 | FC-1 | CGM-8 | CO-2 | RA-DPR | Return Air Damper Control |
| NAE-8 | N2-1 | DX-14 | DI-7 | - | - | - | NAE-13 | FC-1 | CGM-8 | CO-3 | CLG-VLV | Cooling Coil Valve Control |
| NAE-8 | N2-1 | DX-14 | DI-8 | - | - | - | NAE-13 | FC-1 | CGM-8 | CO-4 | HTG-VLV | Heating Coil Valve Control |
| NAE-8 | N2-1 | DX-14 | AO-1 | OA-DPR | Outdoor Air Damper Control | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | AO-1 | - | - |
| NAE-8 | N2-1 | DX-14 | AO-2 | RA-DPR | Return Air Damper Control | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | AO-2 | - | - |
| NAE-8 | N2-1 | DX-14 | AO-9 | CLG-VLV | Cooling Coil Valve Control | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 UI-1 | ZN3-T | Zone 3 Temp |
| NAE-8 | N2-1 | DX-14 | AO-10 | HTG-VLV | Heating Coil Valve Control | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 UI-2 | ZN4-T | Zone 4 Temp |
| NAE-8 | N2-1 | DX-14 | AO-11 | - | - | - | NAE-13 | FC-1 | CGM-8 | XPM1 UI-3 | ZN5-T | Zone 5 Temp |
| NAE-8 | N2-1 | DX-14 | AO-12 | ZN1-DPR | Zone 1 Mixing Damper Control | Remove point and associated wiring | NAE-13 | FC-1 | CGM-8 | XPM1 UI-4 | ZN6-T | Zone 6 Temp |
| NAE-8 | N2-1 | DX-14 | AO-13 | ZN2-DPR | Zone 2 Mixing Damper Control | Remove point and associated wiring | NAE-13 | FC-1 | CGM-8 | XPM1 UI-5 | ZN7-T | Zone 7 Temp |
| NAE-8 | N2-1 | DX-14 | AO-14 | ZN3-DPR | Zone 3 Mixing Damper Control | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 UI-6 | - | - |
| NAE-8 | N2-1 | DX-14 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 UI-7 | - | - |
| NAE-8 | N2-1 | DX-14 | DO-4 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 BI-1 | - | - |
| NAE-8 | N2-1 | DX-14 | DO-5 | - | - | - | NAE-13 | FC-1 | CGM-8 | XPM1 BI-2 | - | - |
| NAE-8 | N2-1 | DX-14 | DO-6 | - | - | - | NAE-13 | FC-1 | CGM-8 | XPM1 BO-1 | - | - |
| NAE-8 | N2-1 | DX-14 | DO-7 | - | - | - | NAE-13 | FC-1 | CGM-8 | XPM1 BO-2 | - | - |
| NAE-8 | N2-1 | DX-14 | DO-8 | - | - | - | NAE-13 | FC-1 | CGM-8 | XPM1 BO-3 | - | - |
| NAE-8 | N2-1 | UNT-15 | AI-1 | ZN4-T | Zone 4 Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 CO-1 | ZN3-DPR | Zone 3 Mixing Damper Control |
| NAE-8 | N2-1 | UNT-15 | AI-2 | ZN5-T | Zone 5 Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 CO-2 | ZN4-DPR | Zone 4 Mixing Damper Control |
| NAE-8 | N2-1 | UNT-15 | AI-3 | ZN6-T | Zone 6 Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 CO-3 | ZN5-DPR | Zone 5 Mixing Damper Control |
| NAE-8 | N2-1 | UNT-15 | AI-4 | ZN7-T | Zone 7 Temp | Move to new controller CGM-8 | NAE-13 | FC-1 | CGM-8 | XPM1 CO-4 | ZN6-DPR | Zone 6 Mixing Damper Control |
| NAE-8 | N2-1 | UNT-15 | AI-5 | - | - | - | NAE-13 | FC-1 | CGM-8 | XPM1 AO-1 | ZN7-DPR | Zone 7 Mixing Damper Control |
| NAE-8 | N2-1 | UNT-15 | AI-6 | - | - | - | NAE-13 | FC-1 | CGM-8 | XPM1 AO-2 | - | - |
| NAE-8 | N2-1 | UNT-15 | AO-1 | ZN4-DPR | Zone 4 Mixing Damper Control | Move to new controller CGM-8 | | | | | | |
| NAE-8 | N2-1 | UNT-15 | AO-2 | ZN5-DPR | Zone 5 Mixing Damper Control | Move to new controller CGM-8 | | | | | | |
| NAE-8 | N2-1 | UNT-15 | AO-3 | ZN6-DPR | Zone 6 Mixing Damper Control | Move to new controller CGM-8 | | | | | | |
| NAE-8 | N2-1 | UNT-15 | AO-4 | ZN7-DPR | Zone 7 Mixing Damper Control | Move to new controller CGM-8 | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BI-1 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BI-2 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BI-3 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BI-4 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BI-5 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BI-6 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BO-1 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BO-2 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BO-3 | - | - | - | | | | | | |
| NAE-8 | N2-1 | UNT-15 | BO-4 | - | - | - | | | | | | |

**B3 AHU-B-1 Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Reset the cooling coil discharge temp setpoint based on maximum zone temperature between maximum (70 degF, adj.) and minimum (55 degF, adj.) values. Reset the heating coil discharge temp setpoint based on minimum zone temperature between maximum (85 degF, adj.) and minimum (70 degF, adj.) values. Modulate mixed air dampers to maintain the mixed air temperature to the calculated cooling coil discharge air setpoint. Modulate heating and cooling valves to maintain the respective coil discharge air temperature at its respective setpoint. Modulate zone dampers between heating and cooling to maintain each zone to its respective zone setpoint. If outdoor air dry bulb temperature goes above the return air temperature, control mixed air dampers to minimum position (25% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (45 degF, adj.), closing to less than minimum position if necessary. Run each coil pump whenever their respective valve is open, when the outdoor air temperature is below the freeze protection setpoint (40 degF, adj.), or if the low temperature alarm is active.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-8 | N2-1 | DX-43 | AI-1 | PHWS-T | Primary HW Supply Temp | Move to new controller CGM-9 | NAE-13 | FC-1 | CGM-9 | UI-1 | PHWS-T | Primary HW Supply Temp |
| NAE-8 | N2-1 | DX-43 | AI-2 | PHWR-T | Primary HW Return Temp | Move to new controller CGM-9 | NAE-13 | FC-1 | CGM-9 | UI-2 | PHWR-T | Primary HW Return Temp |
| NAE-8 | N2-1 | DX-43 | AI-3 | SHWS-T | Secondary HW suppy Temp | Move to new controller CGM-9 | NAE-13 | FC-1 | CGM-9 | UI-3 | SHWS-T | Secondary HW suppy Temp |
| NAE-8 | N2-1 | DX-43 | AI-4 | - | - | - | NAE-13 | FC-1 | CGM-9 | UI-4 | PHWP1-S | Primary HW Pump 1 Sts |
| NAE-8 | N2-1 | DX-43 | AI-5 | - | - | - | NAE-13 | FC-1 | CGM-9 | UI-5 | PWHP2-S | Primary HW Pump 2 Sts |
| NAE-8 | N2-1 | DX-43 | AI-6 | - | - | - | NAE-13 | FC-1 | CGM-9 | UI-6 | SHWP-S | Secondary HW Pump Sts |
| NAE-8 | N2-1 | DX-43 | AI-7 | - | - | - | NAE-13 | FC-1 | CGM-9 | UI-7 | - | - |
| NAE-8 | N2-1 | DX-43 | AI-8 | - | - | - | NAE-13 | FC-1 | CGM-9 | BI-1 | - | - |
| NAE-8 | N2-1 | DX-43 | DI-1 | PHWP1-S | Primary HW Pump 1 Sts | Move to new controller CGM-9 | NAE-13 | FC-1 | CGM-9 | BI-2 | - | - |
| NAE-8 | N2-1 | DX-43 | DI-2 | PWHP2-S | Primary HW Pump 2 Sts | Move to new controller CGM-9 | NAE-13 | FC-1 | CGM-9 | BO-1 | PHWP1-C | Primary HW Pump 1 Cmd |
| NAE-8 | N2-1 | DX-43 | DI-3 | SHWP-S | Secondary HW Pump Sts | Move to new controller CGM-9 | NAE-13 | FC-1 | CGM-9 | BO-2 | PHWP2-C | Primary HW Pump 2 Cmd |
| NAE-8 | N2-1 | DX-43 | DI-4 | - | - | - | NAE-13 | FC-1 | CGM-9 | BO-3 | SHWP-C | Secondary HW Pump Cmd |
| NAE-8 | N2-1 | DX-43 | DI-5 | - | - | - | NAE-13 | FC-1 | CGM-9 | CO-1 | HX1-VLV | Heat Exchanger 1/3 Valve Ctl |
| NAE-8 | N2-1 | DX-43 | DI-6 | - | - | - | NAE-13 | FC-1 | CGM-9 | CO-2 | HX2-VLV | Heat Exchanger 2/3 Valve Ctl |
| NAE-8 | N2-1 | DX-43 | DI-7 | - | - | - | NAE-13 | FC-1 | CGM-9 | CO-3 | SHW-VLV | Secondary HW Valve Ctl |
| NAE-8 | N2-1 | DX-43 | DI-8 | - | - | - | NAE-13 | FC-1 | CGM-9 | CO-4 | - | - |
| NAE-8 | N2-1 | DX-43 | AO-1 | HX1-VLV | Heat Exchanger 1/3 Valve Ctl | Move to new controller CGM-9 | NAE-13 | FC-1 | CGM-9 | AO-1 | - | - |
| NAE-8 | N2-1 | DX-43 | AO-2 | HX2-VLV | Heat Exchanger 2/3 Valve Ctl | Move to new controller CGM-9 | NAE-13 | FC-1 | CGM-9 | AO-2 | - | - |
| NAE-8 | N2-1 | DX-43 | AO-9 | SHW-VLV | Secondary HW Valve Ctl | Move to new controller CGM-9 | | | | | | |
| NAE-8 | N2-1 | DX-43 | AO-10 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-43 | AO-11 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-43 | AO-12 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-43 | AO-13 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-43 | AO-14 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-43 | DO-3 | PHWP1-C | Primary HW Pump 1 Cmd | Move to new controller CGM-9 | | | | | | |
| NAE-8 | N2-1 | DX-43 | DO-4 | PHWP2-C | Primary HW Pump 2 Cmd | Move to new controller CGM-9 | | | | | | |
| NAE-8 | N2-1 | DX-43 | DO-5 | SHWP-C | Secondary HW Pump Cmd | Move to new controller CGM-9 | | | | | | |
| NAE-8 | N2-1 | DX-43 | DO-6 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-43 | DO-7 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-43 | DO-8 | - | - | - | | | | | | |

**B3 C-Bay Hot Water Control**

**Start/Stop Control**

Whenever the system is enabled and the outdoor air temperature is below the outdoor air lockout setpoint (55 degF, adj.), the lead primary hot water pump shall be started. If the lead pump fails to provide status after a start commend is given the lag primary pump shall be commanded on. When the system registers status with either primary pump, the secondary pump shal be started.

**Hot Water Temperature Control**

Reset the primary hot water setpoint between its maximum (180 degF, adj.) and minimum (140 degF, adj.) based on the outdoor air temperature (from 35 degF, adj. and 60 degF adj.). Reset the secondary hot water setpoint between its maximum (180 degF, adj.) and minimum (170 degF, adj.) based on the outdoor air temperature (from 35 degF, adj. and 60 degF adj.). When the secondary pump status is proven, modulate the 1/3 and 2/3 valves in turn to control the primary hot water return temp to its setpoint. Modulate the secondary hot water valve to control the secondary hot water supply temp to its setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-8 | N2-1 | DX-44 | AI-1 | ZN-T | Zone Temperature | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | UI-1 | ZN-T | Zone Temperature |
| NAE-8 | N2-1 | DX-44 | AI-2 | DA-T | Discharge Air Temp | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | UI-2 | DA-T | Discharge Air Temp |
| NAE-8 | N2-1 | DX-44 | AI-3 | MA-T | Mixed Air Temp | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | UI-3 | MA-T | Mixed Air Temp |
| NAE-8 | N2-1 | DX-44 | AI-4 | - | - | - | NAE-13 | FC-1 | CGM-10 | UI-4 | R-134a | R-134a Level |
| NAE-8 | N2-1 | DX-44 | AI-5 | R-134a | R-134a Level | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | UI-5 | R-123 | R-123 Level |
| NAE-8 | N2-1 | DX-44 | AI-6 | R-123 | R-123 Level | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | UI-6 | SF-S | Supply Fan Status |
| NAE-8 | N2-1 | DX-44 | AI-7 | - | - | - | NAE-13 | FC-1 | CGM-10 | UI-7 | EF-S | Exhaust Fan Status |
| NAE-8 | N2-1 | DX-44 | AI-8 | - | - | - | NAE-13 | FC-1 | CGM-10 | BI-1 | LT-ALM | Low Temp Alarm |
| NAE-8 | N2-1 | DX-44 | DI-1 | SF-S | Supply Fan Status | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | BI-2 | FILT-S | Pre Filter Status |
| NAE-8 | N2-1 | DX-44 | DI-2 | EF-S | Exhaust Fan Status | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | BO-1 | SF-C | Supply Fan Command |
| NAE-8 | N2-1 | DX-44 | DI-3 | LT-ALM | Low Temp Alarm | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | BO-2 | EF-C | Exhaust Fan Command |
| NAE-8 | N2-1 | DX-44 | DI-4 | FILT-S | Pre Filter Status | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | BO-3 | E-SDWN-C | Emergency Shutdown Cmd |
| NAE-8 | N2-1 | DX-44 | DI-5 | Ref-Leak | Refrigerant Leak Alm | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | CO-1 | MA-DPR | Mixed Air Damper Control |
| NAE-8 | N2-1 | DX-44 | DI-6 | VSPB-1 | Vent Pushbutton 1 (C-Bay) | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | CO-2 | HTG-VLV | HW Coil Valve Control |
| NAE-8 | N2-1 | DX-44 | DI-7 | VSPB-2 | Vent Pushbutton 1 (B-Bay) | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | CO-3 | EF-VSD | Exh Fan VSD Control |
| NAE-8 | N2-1 | DX-44 | DI-8 | VULCAIN | Vulcain Ref Monitor Alarm | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | CO-4 | VENT-D-1 | Ventilation Damper D1 Ctl |
| NAE-8 | N2-1 | DX-44 | AO-1 | MA-DPR | Mixed Air Damper Control | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | AO-1 | VENT-D-2 | Ventilation Damper D2 Ctl |
| NAE-8 | N2-1 | DX-44 | AO-2 | HTG-VLV | HW Coil Valve Control | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | AO-2 | - | - |
| NAE-8 | N2-1 | DX-44 | AO-9 | EF-VSD | Exh Fan VSD Control | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | XPM1 UI-1 | Ref-Leak | Refrigerant Leak Alm |
| NAE-8 | N2-1 | DX-44 | AO-10 | VENT-D-1 | Ventilation Damper D1 Ctl | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | XPM1 UI-2 | VSPB-1 | Vent Pushbutton 1 (C-Bay) |
| NAE-8 | N2-1 | DX-44 | AO-11 | VENT-D-2 | Ventilation Damper D2 Ctl | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | XPM1 UI-3 | VSPB-2 | Vent Pushbutton 1 (B-Bay) |
| NAE-8 | N2-1 | DX-44 | AO-12 | - | - | - | NAE-13 | FC-1 | CGM-10 | XPM1 BI-1 | VULCAIN | Vulcain Ref Monitor Alarm |
| NAE-8 | N2-1 | DX-44 | AO-13 | - | - | - | NAE-13 | FC-1 | CGM-10 | XPM1 BO-1 | - | - |
| NAE-8 | N2-1 | DX-44 | AO-14 | - | - | - | NAE-13 | FC-1 | CGM-10 | XPM1 BO-2 | - | - |
| NAE-8 | N2-1 | DX-44 | DO-3 | SF-C | Supply Fan Command | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | XPM1 CO-1 | - | - |
| NAE-8 | N2-1 | DX-44 | DO-4 | EF-C | Exhaust Fan Command | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | XPM1 CO-2 | - | - |
| NAE-8 | N2-1 | DX-44 | DO-5 | E-SDWN-C | Emergency Shutdown Cmd | Move to new controller CGM-10 | NAE-13 | FC-1 | CGM-10 | XPM1 CO-3 | - | - |
| NAE-8 | N2-1 | DX-44 | DO-6 | - | - | - | NAE-13 | FC-1 | CGM-10 | XPM1 CO-4 | - | - |
| NAE-8 | N2-1 | DX-44 | DO-7 | - | - | - | | | | | | |
| NAE-8 | N2-1 | DX-44 | DO-8 | - | - | - | | | | | | |

**B3 B-Bay Mech Rm HVU Control**

**Start/Stop Control**

HVU: During occupied hours the HVU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve. If the Vulcain refrigerant monitor goes into alarm the fan shall run.

Exhaust Fan: : During occupied hours the exhaust fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the emergency shutdown output shall be activated, disabling the fan(s). If the Vulcain refrigerant monitor goes into alarm or if either of the emergency ventilation buttons is pressed the fan shall run.

**Temperature Control**

Reset the discharge temp setpoint based on the difference between the zone temperature and the zone temperature setpoint (65 degF, adj.) between maximum (80 degF, adj.) and minimum (55 degF, adj.) values. Modulate mixed air dampers and heating valve to maintain the discharge air temperature at its setpoint. Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (53 degF, adj.), closing to less than minimum position if necessary,

**Ventilation Control**

Under not emergency ventilation conditions, ventilation damper D1 shall be 100% open and ventilation damper D2 shall be 0% open. In an emergency ventilation condition (Vulcain input active or either pushbutton active), damper D1 shall be sent to 50% open and damper D2 shall be sent to 100% open.

**Exhaust Fan VSD Control**

During non emergency ventilation conditions, the exhaust fan VSD control shall follow the mixed air damper signal so that at 0% outdoor air the VSD will be at minimum and at 100% outdoor air the VSD wil be at 100%. In an emergency ventilation condition (Vulcain input active or either pushbutton active), the exhaust fan VSD shall be run at 100%.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | DX-17 | AI-1 | DA1-T | Cryo AHU-1 Disch Temp | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | UI-1 | DA-T | Discharge Air Temp |
| NAE-7 | N2-1 | DX-17 | AI-2 | DA2-T | Cryo AHU-2 Disch Temp | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | UI-2 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | DX-17 | AI-3 | ZN1-T | Cryo AHU-1 Zone Temp | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | UI-3 | ZN-H | Zone Humidity |
| NAE-7 | N2-1 | DX-17 | AI-4 | ZN2-T | Cryo AHU-2 Zone Temp | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | UI-4 | DA-P | Discharge Static Press |
| NAE-7 | N2-1 | DX-17 | AI-5 | ZN1-H | Cryo AHU-1 Zone Humidity | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | UI-5 | MA-T | Mixed Air Temp |
| NAE-7 | N2-1 | DX-17 | AI-6 | ZN2-H | Cryo AHU-2 Zone Humidity | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | UI-6 | CHWE-T | Clg Coil CHW Ent Temp |
| NAE-7 | N2-1 | DX-17 | AI-7 | DA1-SP | Cryo AHU-1 Disch Static Press | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | UI-7 | CHWL-T | Clg Coil CHW Lvg Temp |
| NAE-7 | N2-1 | DX-17 | AI-8 | DA2-SP | Cryo AHU-2 Disch Static Press | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | BI-1 | SF-S | Supply Fan Status |
| NAE-7 | N2-1 | DX-17 | DI-1 | SF1-S | Cryo AHU-1 Sup Fan Status | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | BI-2 | LT-Alm | Low Temp Alarm |
| NAE-7 | N2-1 | DX-17 | DI-2 | SF2-S | Cryo AHU-2 Sup Fan Status | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | BO-1 | SF-C | Supply Fan Command |
| NAE-7 | N2-1 | DX-17 | DI-3 | LT1-Alm | Cryo AHU-1 Low Temp Alarm | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | BO-2 | RA-DPR | Return Air Damper Command |
| NAE-7 | N2-1 | DX-17 | DI-4 | LT2-Alm | Cryo AHU-2 Low Temp Alarm | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | BO-3 | E-SDWN-C | Emergency Shutdown Command |
| NAE-7 | N2-1 | DX-17 | DI-5 | EF1-S | Exhaust Fan 1 Status | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | CO-1 | OA-DPR | Outdoor Air Damper Control |
| NAE-7 | N2-1 | DX-17 | DI-6 | EF2-S | Exhaust Fan 2 Status | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | CO-2 | CLG-VLV | Clg Coil Valve Control |
| NAE-7 | N2-1 | DX-17 | DI-7 | FILT1-S | Cryo AHU-1 PreFilter Status | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | CO-3 | HTG-VLV | Htg Coil Valve Control |
| NAE-7 | N2-1 | DX-17 | DI-8 | FILT2-S | Cryo AHU-2 PreFilter Status | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | CO-4 | SF-IV | Inlet Vanes Control |
| NAE-7 | N2-1 | DX-17 | AO-1 | OA1-DPR | Cryo AHU-1 OA Damper Control | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | AO-1 | - | - |
| NAE-7 | N2-1 | DX-17 | AO-2 | OA2-DPR | Cryo AHU-2 OA Damper Control | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | AO-2 | - | - |
| NAE-7 | N2-1 | DX-17 | AO-9 | CLG1-VLV | Cryo AHU-1 Clg Coil Valve Ctl | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | XPM1 UI-1 | FILT-S | PreFilter Status |
| NAE-7 | N2-1 | DX-17 | AO-10 | CLG2-VLV | Cryo AHU-2 Clg Coil Valve Ctl | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | XPM1 UI-2 | EF-CHR-D | Chllr Rm Exh Fan Dpr Sts |
| NAE-7 | N2-1 | DX-17 | AO-11 | HTG1-VLV | Cryo AHU-1 Htg Coil Valve Ctl | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | XPM1 UI-3 | EF-CHR-S | Chllr Rm Exh Fan Status |
| NAE-7 | N2-1 | DX-17 | AO-12 | HTG2-VLV | Cryo AHU-2 Htg Coil Valve Ctl | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | XPM1 BI-1 | - | - |
| NAE-7 | N2-1 | DX-17 | AO-13 | HUM1-VLV | Cryo AHU-1 Humid Valve Ctl | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | XPM1 BO-1 | EF-CHR-C | Chllr Rm Exh Fan Command |
| NAE-7 | N2-1 | DX-17 | AO-14 | HUM2-VLV | Cryo AHU-2 Humid Valve Ctl | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | XPM1 BO-2 | - | - |
| NAE-7 | N2-1 | DX-17 | DO-3 | SF1-C | Cryo AHU-1 Sup Fan Command | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | XPM1 CO-1 | EF-CHR-O | Chllr Rm Exh Fan VSD Control |
| NAE-7 | N2-1 | DX-17 | DO-4 | SF2-C | Cryo AHU-2 Sup Fan Command | Remove point and associated wiring | SNE-2 | FC-1 | CGM-58 | XPM1 CO-2 | - | - |
| NAE-7 | N2-1 | DX-17 | DO-5 | RA1-DPR | Cryo AHU-1 Ret Air Dpr Command | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | XPM1 CO-3 | - | - |
| NAE-7 | N2-1 | DX-17 | DO-6 | E-SDWN-C | Emergency Shutdown Command | Move to new controller CGM-58 | SNE-2 | FC-1 | CGM-58 | XPM1 CO-4 | - | - |
| NAE-7 | N2-1 | DX-17 | DO-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | DO-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT1AI1 | MA1-T | Cryo AHU-1 Mixed Air Temp | Move to new controller CGM-58 | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT1AI2 | MA2-T | Cryo AHU-2 Mixed Air Temp | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT1AI3 | CHWE1-T | Cryo AHU-1 CHW Coil Ent Temp | Move to new controller CGM-58 | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT1AI4 | CHWL1-T | Cryo AHU-1 CHW Coil Lvng Temp | Move to new controller CGM-58 | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT1AI5 | CHWE2-T | Cryo AHU-2 CHW Coil Ent Temp | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT1AI6 | CHWL2-T | Cryo AHU-2 CHW Coil Lvng Temp | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT1AO1 | SF1-IV | Cryo AHU-1 Inlet Vanes Control | Move to new controller CGM-58 | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT1AO2 | SF2-IV | Cryo AHU-2 Inlet Vanes Control | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT2AI1 | C140-T | Room C140 Zone Temp | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT2AI2 | C140-H | Room C140 Zone Humidity | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT2AI3 | HVAC1CO2 | Cryo AHU-1 Return CO2 | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT2AI4 | HVAC2CO2 | Cryo AHU-2 Return CO2 | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT2AI5 | D143-T | Room D143 Zone Temp | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT2AI6 | D143-H | Room D143 Zone Humidity | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT2AO1 | EF-CHR-O | Chllr Rm Exh Fan VSD Control | Move to new controller CGM-58 | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT2AO2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT3AI1 | D143A-T | Room D143A Zone Temp | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT3AI2 | D143A-H | Room D143A Zone Humidity | Remove point and associated wiring | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT3AI3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT3AI4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT3AI5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT3AI6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT3AO1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT3AO2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT4DI1 | EF-CHR-D | Chllr Rm Exh Fan Dpr Sts | Move to new controller CGM-58 | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT4DI2 | EF-CHR-S | Chllr Rm Exh Fan Status | Move to new controller CGM-58 | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT4DI3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT4DI4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT4DO5 | EF-CHR-C | Chllr Rm Exh Fan Command | Move to new controller CGM-58 | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT4DO6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT4DO7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-17 | XT4DO8 | - | - | - | | | | | | |

**B106 AHU-CRYO Control**

**Start/Stop Control**

During occupied hours the AHU fan(s) will run continuously and during unoccupied hours the fan(s) will be off. If the controller receives an emergency shutdown signal from the supervisory system, the fan(s) shal be turned off. If the low temperature alarm activates the system shall be shut down, closing the outdoor air damper and opening the heating coil valve.

**Temperature Control**

Calculate difference between zone temperature and zone temperature setpoint of area served by this AHU to control discharge air setpoint between maximum (68 degF, adj.) and minimum (55 degF, adj.) values. Modulate dampers and heating and cooling valves to maintain discharge air temperature at its setpoint. If outdoor air dry bulb temperature goes above the economizer setpoint (60 degF, adj.), control mixed air dampers to minimum position (25% OA, adj.). Mixed air dampers shall also modulate to ensure the mixed air temperature does not drop below the mixed air low limit setpoint (50 degF, adj.), closing to less than minimum position if necessary.

**Static Pressure Control**

Modulate inlet vanes to maintain the discharge static pressure at its setpoint (1.5 in.wc.,adj.).

**Refrigerant Leak Ventilation Control**

Whenever the refrigerant alarm is active (as written from another controller), The exhaust fan damper shall be commanded open and upon proof of open status, the exhaust fan shall be started. The AHU supply fan shall be started if not already running and the mixed air dampers shall be commanded to 100% OA (the mixed air low limit control shall be allowed to close the dampers below this level).

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-7 | N2-1 | DX-101 | AI-1 | C158-T | Room C158 Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | UI-1 | C158-T | Room C158 Temp | |
| NAE-7 | N2-1 | DX-101 | AI-2 | Str12-T | Stair 12 Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | UI-2 | Str12-T | Stair 12 Temp | |
| NAE-7 | N2-1 | DX-101 | AI-3 | Str11-T | Stair 11 Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | UI-3 | Str11-T | Stair 11 Temp | |
| NAE-7 | N2-1 | DX-101 | AI-4 | W163-T | Room W163 Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | UI-4 | W163-T | Room W163 Temp | |
| NAE-7 | N2-1 | DX-101 | AI-5 | W169-T | Room W169 Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | UI-5 | W169-T | Room W169 Temp | |
| NAE-7 | N2-1 | DX-101 | AI-6 | W181B-T | Room W181B Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | UI-6 | W181B-T | Room W181B Temp | |
| NAE-7 | N2-1 | DX-101 | AI-7 | W181C-T | Room W181C Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | UI-7 | - | - | |
| NAE-7 | N2-1 | DX-101 | AI-8 | W181D-T | Room W181D Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | BI-1 | - | - | |
| NAE-7 | N2-1 | DX-101 | DI-1 | - | - | - | SNE-2 | FC-1 | CGM-59 | BI-2 | - | - | |
| NAE-7 | N2-1 | DX-101 | DI-2 | - | - | - | SNE-2 | FC-1 | CGM-59 | BO-1 | - | - | |
| NAE-7 | N2-1 | DX-101 | DI-3 | - | - | - | SNE-2 | FC-1 | CGM-59 | BO-2 | - | - | |
| NAE-7 | N2-1 | DX-101 | DI-4 | - | - | - | SNE-2 | FC-1 | CGM-59 | BO-3 | - | - | |
| NAE-7 | N2-1 | DX-101 | DI-5 | - | - | - | SNE-2 | FC-1 | CGM-59 | CO-1 | C158-Vlv | Room C158 FTR Valve Control | |
| NAE-7 | N2-1 | DX-101 | DI-6 | - | - | - | SNE-2 | FC-1 | CGM-59 | CO-2 | Str12-Vlv | Stair 12 FTR Valve Control | |
| NAE-7 | N2-1 | DX-101 | DI-7 | - | - | - | SNE-2 | FC-1 | CGM-59 | CO-3 | Str11-Vlv | Stair 11 FTR Valve Control | |
| NAE-7 | N2-1 | DX-101 | DI-8 | - | - | - | SNE-2 | FC-1 | CGM-59 | CO-4 | W163-Vlv | Room W163 FTR Valve Control | |
| NAE-7 | N2-1 | DX-101 | AO-1 | C158-Vlv | Room C158 FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | AO-1 | W169-Vlv | Room W169 FTR Valve Control | |
| NAE-7 | N2-1 | DX-101 | AO-2 | Str12-Vlv | Stair 12 FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | AO-2 | W181B-Vlv | Room W181B FTR Valve Control | |
| NAE-7 | N2-1 | DX-101 | AO-9 | Str11-Vlv | Stair 11 FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 UI-1 | W181C-T | Room W181C Temp | |
| NAE-7 | N2-1 | DX-101 | AO-10 | W163-Vlv | Room W163 FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 UI-2 | W181D-T | Room W181D Temp | |
| NAE-7 | N2-1 | DX-101 | AO-11 | W169-Vlv | Room W169 FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 UI-3 | W181E-T | Room W181E Zone Temp | |
| NAE-7 | N2-1 | DX-101 | AO-12 | W181B-Vlv | Room W181B FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 UI-4 | W183-T | Room W183 Zone Temp | |
| NAE-7 | N2-1 | DX-101 | AO-13 | W181C-Vlv | Room W181C FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 UI-5 | W191-T | Room W191 Zone Temp | |
| NAE-7 | N2-1 | DX-101 | AO-14 | W181D-Vlv | Room W181D FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 UI-6 | W193-T | Room W193 Zone Temp | |
| NAE-7 | N2-1 | DX-101 | DO-3 | - | - | - | SNE-2 | FC-1 | CGM-59 | XPM1 UI-7 | - | - | |
| NAE-7 | N2-1 | DX-101 | DO-4 | - | - | - | SNE-2 | FC-1 | CGM-59 | XPM1 BI-1 | - | - | |
| NAE-7 | N2-1 | DX-101 | DO-5 | - | - | - | SNE-2 | FC-1 | CGM-59 | XPM1 BI-2 | - | - | |
| NAE-7 | N2-1 | DX-101 | DO-6 | - | - | - | SNE-2 | FC-1 | CGM-59 | XPM1 BO-1 | - | - | |
| NAE-7 | N2-1 | DX-101 | DO-7 | - | - | - | SNE-2 | FC-1 | CGM-59 | XPM1 BO-2 | - | - | |
| NAE-7 | N2-1 | DX-101 | DO-8 | - | - | - | SNE-2 | FC-1 | CGM-59 | XPM1 BO-3 | - | - | |
| NAE-7 | N2-1 | DX-102 | AI-1 | W181E-T | Room W181E Zone Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 CO-1 | W181C-Vlv | Room W181C FTR Valve Control | |
| NAE-7 | N2-1 | DX-102 | AI-2 | W183-T | Room W183 Zone Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 CO-2 | W181D-Vlv | Room W181D FTR Valve Control | |
| NAE-7 | N2-1 | DX-102 | AI-3 | W191-T | Room W191 Zone Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 CO-3 | W181E-Vlv | Room W181E FTR Valve Control | |
| NAE-7 | N2-1 | DX-102 | AI-4 | W193-T | Room W193 Zone Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-59 | XPM1 CO-4 | W183-Vlv | Room W183 FTR Valve Control | |
| NAE-7 | N2-1 | DX-102 | AI-5 | W167-T | Room W167 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-59 | XPM1 AO-1 | W191-Vlv | Room W191 FTR Valve Control | |
| NAE-7 | N2-1 | DX-102 | AI-6 | W174-T | Room W174 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-59 | XPM1 AO-2 | W193-Vlv | Room W193 FTR Valve Control | |
| NAE-7 | N2-1 | DX-102 | AI-7 | W178-T | Room W178 Zone Temp | Move to new controller CGM-60 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AI-8 | W180-T | Room W180 Zone Temp | Move to new controller CGM-60 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DI-1 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DI-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DI-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DI-4 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DI-5 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DI-6 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DI-7 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DI-8 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AO-1 | W181E-Vlv | Room W181E FTR Valve Control | Move to new controller CGM-59 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AO-2 | W183-Vlv | Room W183 FTR Valve Control | Move to new controller CGM-59 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AO-9 | W191-Vlv | Room W191 FTR Valve Control | Move to new controller CGM-59 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AO-10 | W193-Vlv | Room W193 FTR Valve Control | Move to new controller CGM-59 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AO-11 | W167-Vlv | Room W167 FTR Valve Control | Move to new controller CGM-60 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AO-12 | W174-Vlv | Room W174 FTR Valve Control | Move to new controller CGM-60 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AO-13 | W178-Vlv | Room W178 FTR Valve Control | Move to new controller CGM-60 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | AO-14 | W180-Vlv | Room W180 FTR Valve Control | Move to new controller CGM-60 | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DO-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DO-4 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DO-5 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DO-6 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DO-7 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | DX-102 | DO-8 | - | - | - | | | | | | | |

**B106 Perimeter Heat Control**

**Temperature Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | DX-102 | AI-1 | W181E-T | Room W181E Zone Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-60 | UI-1 | W167-T | Room W167 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AI-2 | W183-T | Room W183 Zone Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-60 | UI-2 | W174-T | Room W174 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AI-3 | W191-T | Room W191 Zone Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-60 | UI-3 | W178-T | Room W178 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AI-4 | W193-T | Room W193 Zone Temp | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-60 | UI-4 | W180-T | Room W180 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AI-5 | W167-T | Room W167 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | UI-5 | W184-T | Room W184 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AI-6 | W174-T | Room W174 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | UI-6 | W188w-T | Room W188 East Zone Temp |
| NAE-7 | N2-1 | DX-102 | AI-7 | W178-T | Room W178 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | UI-7 | W188e-T | Room W188 West Zone Temp |
| NAE-7 | N2-1 | DX-102 | AI-8 | W180-T | Room W180 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | BI-1 | - | - |
| NAE-7 | N2-1 | DX-102 | DI-1 | - | - | - | SNE-2 | FC-1 | CGM-60 | BI-2 | - | - |
| NAE-7 | N2-1 | DX-102 | DI-2 | - | - | - | SNE-2 | FC-1 | CGM-60 | BO-1 | - | - |
| NAE-7 | N2-1 | DX-102 | DI-3 | - | - | - | SNE-2 | FC-1 | CGM-60 | BO-2 | - | - |
| NAE-7 | N2-1 | DX-102 | DI-4 | - | - | - | SNE-2 | FC-1 | CGM-60 | BO-3 | - | - |
| NAE-7 | N2-1 | DX-102 | DI-5 | - | - | - | SNE-2 | FC-1 | CGM-60 | CO-1 | W167-Vlv | Room W167 FTR Valve Control |
| NAE-7 | N2-1 | DX-102 | DI-6 | - | - | - | SNE-2 | FC-1 | CGM-60 | CO-2 | W174-Vlv | Room W174 FTR Valve Control |
| NAE-7 | N2-1 | DX-102 | DI-7 | - | - | - | SNE-2 | FC-1 | CGM-60 | CO-3 | W178-Vlv | Room W178 FTR Valve Control |
| NAE-7 | N2-1 | DX-102 | DI-8 | - | - | - | SNE-2 | FC-1 | CGM-60 | CO-4 | W180-Vlv | Room W180 FTR Valve Control |
| NAE-7 | N2-1 | DX-102 | AO-1 | W181E-Vlv | Room W181E FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-60 | AO-1 | W184-Vlv | Room W184 FTR Valve Control |
| NAE-7 | N2-1 | DX-102 | AO-2 | W183-Vlv | Room W183 FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-60 | AO-2 | W188wVlv | Room W188 East FTR Valve Ctl |
| NAE-7 | N2-1 | DX-102 | AO-9 | W191-Vlv | Room W191 FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-60 | XPM1 UI-1 | W188e-T | Room W188 West Zone Temp |
| NAE-7 | N2-1 | DX-102 | AO-10 | W193-Vlv | Room W193 FTR Valve Control | Move to new controller CGM-59 | SNE-2 | FC-1 | CGM-60 | XPM1 UI-2 | C160-T | Room C160 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AO-11 | W167-Vlv | Room W167 FTR Valve Control | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 UI-3 | F137-T | Room F137 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AO-12 | W174-Vlv | Room W174 FTR Valve Control | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 UI-4 | F133-T | Room F133 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AO-13 | W178-Vlv | Room W178 FTR Valve Control | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 UI-5 | G1C-01-T | Room G1C-01 Zone Temp |
| NAE-7 | N2-1 | DX-102 | AO-14 | W180-Vlv | Room W180 FTR Valve Control | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 UI-6 | - | - |
| NAE-7 | N2-1 | DX-102 | DO-3 | - | - | - | SNE-2 | FC-1 | CGM-60 | XPM1 UI-7 | - | - |
| NAE-7 | N2-1 | DX-102 | DO-4 | - | - | - | SNE-2 | FC-1 | CGM-60 | XPM1 BI-1 | - | - |
| NAE-7 | N2-1 | DX-102 | DO-5 | - | - | - | SNE-2 | FC-1 | CGM-60 | XPM1 BI-2 | - | - |
| NAE-7 | N2-1 | DX-102 | DO-6 | - | - | - | SNE-2 | FC-1 | CGM-60 | XPM1 BO-1 | - | - |
| NAE-7 | N2-1 | DX-102 | DO-7 | - | - | - | SNE-2 | FC-1 | CGM-60 | XPM1 BO-2 | - | - |
| NAE-7 | N2-1 | DX-102 | DO-8 | - | - | - | SNE-2 | FC-1 | CGM-60 | XPM1 BO-3 | - | - |
| NAE-7 | N2-1 | DX-103 | AI-1 | W184-T | Room W184 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 CO-1 | W188eVlv | Room W188 West FTR Valve Ctl |
| NAE-7 | N2-1 | DX-103 | AI-2 | W188w-T | Room W188 East Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 CO-2 | W188eVlv | Room W188 West FTR Valve Ctl |
| NAE-7 | N2-1 | DX-103 | AI-3 | W188e-T | Room W188 West Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 CO-3 | W188eVlv | Room W188 West FTR Valve Ctl |
| NAE-7 | N2-1 | DX-103 | AI-4 | - | - | - | SNE-2 | FC-1 | CGM-60 | XPM1 CO-4 | W188eVlv | Room W188 West FTR Valve Ctl |
| NAE-7 | N2-1 | DX-103 | AI-5 | C160-T | Room C160 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 AO-1 | W188eVlv | Room W188 West FTR Valve Ctl |
| NAE-7 | N2-1 | DX-103 | AI-6 | F137-T | Room F137 Zone Temp | Move to new controller CGM-60 | SNE-2 | FC-1 | CGM-60 | XPM1 AO-2 | - | - |
| NAE-7 | N2-1 | DX-103 | AI-7 | F133-T | Room F133 Zone Temp | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | AI-8 | G1C-01-T | Room G1C-01 Zone Temp | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | DI-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DI-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DI-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DI-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DI-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DI-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | AO-1 | W184-Vlv | Room W184 FTR Valve Control | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | AO-2 | W188wVlv | Room W188 East FTR Valve Ctl | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | AO-9 | W188eVlv | Room W188 West FTR Valve Ctl | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | AO-10 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | AO-11 | W188eVlv | Room W188 West FTR Valve Ctl | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | AO-12 | W188eVlv | Room W188 West FTR Valve Ctl | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | AO-13 | W188eVlv | Room W188 West FTR Valve Ctl | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | AO-14 | W188eVlv | Room W188 West FTR Valve Ctl | Move to new controller CGM-60 | | | | | | |
| NAE-7 | N2-1 | DX-103 | DO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DO-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DO-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DO-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-103 | DO-8 | - | - | - | | | | | | |

**B106 Perimeter Heat Control**

**Temperature Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | DX-104 | AI-1 | F109-T | Room F109 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | UI-1 | F109-T | Room F109 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AI-2 | F103-T | Room F103 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | UI-2 | F103-T | Room F103 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AI-3 | Str1-T | Stair 1 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | UI-3 | Str1-T | Stair 1 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AI-4 | D100-T | Room D100 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | UI-4 | D100-T | Room D100 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AI-5 | - | - | - | SNE-2 | FC-1 | CGM-61 | UI-5 | O120-T | Room O120 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AI-6 | - | - | - | SNE-2 | FC-1 | CGM-61 | UI-6 | O124-T | Room O124 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AI-7 | - | - | - | SNE-2 | FC-1 | CGM-61 | UI-7 | - | - |
| NAE-7 | N2-1 | DX-104 | AI-8 | - | - | - | SNE-2 | FC-1 | CGM-61 | BI-1 | - | - |
| NAE-7 | N2-1 | DX-104 | DI-1 | - | - | - | SNE-2 | FC-1 | CGM-61 | BI-2 | - | - |
| NAE-7 | N2-1 | DX-104 | DI-2 | - | - | - | SNE-2 | FC-1 | CGM-61 | BO-1 | - | - |
| NAE-7 | N2-1 | DX-104 | DI-3 | - | - | - | SNE-2 | FC-1 | CGM-61 | BO-2 | - | - |
| NAE-7 | N2-1 | DX-104 | DI-4 | - | - | - | SNE-2 | FC-1 | CGM-61 | BO-3 | - | - |
| NAE-7 | N2-1 | DX-104 | DI-5 | - | - | - | SNE-2 | FC-1 | CGM-61 | CO-1 | F109-Vlv | Room F109 FTR Valve Control |
| NAE-7 | N2-1 | DX-104 | DI-6 | - | - | - | SNE-2 | FC-1 | CGM-61 | CO-2 | F103-Vlv | Room F103 FTR Valve Control |
| NAE-7 | N2-1 | DX-104 | DI-7 | - | - | - | SNE-2 | FC-1 | CGM-61 | CO-3 | Str1-Vlv | Stair 1 FTR Valve Control |
| NAE-7 | N2-1 | DX-104 | DI-8 | - | - | - | SNE-2 | FC-1 | CGM-61 | CO-4 | D100-Vlv | Room D100 FTR Valve Control |
| NAE-7 | N2-1 | DX-104 | AO-1 | F109-Vlv | Room F109 FTR Valve Control | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | AO-1 | O120-Vlv | Room O120 FTR Valve Control |
| NAE-7 | N2-1 | DX-104 | AO-2 | F103-Vlv | Room F103 FTR Valve Control | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | AO-2 | O124-Vlv | Room O124 FTR Valve Control |
| NAE-7 | N2-1 | DX-104 | AO-9 | Str1-Vlv | Stair 1 FTR Valve Control | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | XPM1 UI-1 | O127-T | Room O127 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AO-10 | D100-Vlv | Room D100 FTR Valve Control | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | XPM1 UI-2 | O128-T | Room O128 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AO-11 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 UI-3 | O130c-T | Room O130c Zone Temp |
| NAE-7 | N2-1 | DX-104 | AO-12 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 UI-4 | O130-T | Room O130 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AO-13 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 UI-5 | O138-T | Room O138 Zone Temp |
| NAE-7 | N2-1 | DX-104 | AO-14 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 UI-6 | O140-T | Room O140 Zone Temp |
| NAE-7 | N2-1 | DX-104 | DO-3 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 UI-7 | - | - |
| NAE-7 | N2-1 | DX-104 | DO-4 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 BI-1 | - | - |
| NAE-7 | N2-1 | DX-104 | DO-5 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 BI-2 | - | - |
| NAE-7 | N2-1 | DX-104 | DO-6 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 BO-1 | - | - |
| NAE-7 | N2-1 | DX-104 | DO-7 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 BO-2 | - | - |
| NAE-7 | N2-1 | DX-104 | DO-8 | - | - | - | SNE-2 | FC-1 | CGM-61 | XPM1 BO-3 | - | - |
| NAE-7 | N2-1 | DX-105 | AI-1 | O120-T | Room O120 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | XPM1 CO-1 | O127-Vlv | Room O127 FTR Valve Control |
| NAE-7 | N2-1 | DX-105 | AI-2 | O124-T | Room O124 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | XPM1 CO-2 | O128-Vlv | Room O128 FTR Valve Control |
| NAE-7 | N2-1 | DX-105 | AI-3 | O127-T | Room O127 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | XPM1 CO-3 | O130c-Vlv | Room O130c FTR Valve Control |
| NAE-7 | N2-1 | DX-105 | AI-4 | O128-T | Room O128 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | XPM1 CO-4 | O130-Vlv | Room O130 FTR Valve Control |
| NAE-7 | N2-1 | DX-105 | AI-5 | O130c-T | Room O130c Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | XPM1 AO-1 | O138-Vlv | Room O138 FTR Valve Control |
| NAE-7 | N2-1 | DX-105 | AI-6 | O130-T | Room O130 Zone Temp | Move to new controller CGM-61 | SNE-2 | FC-1 | CGM-61 | XPM1 AO-2 | O140-Vlv | Room O140 FTR Valve Control |
| NAE-7 | N2-1 | DX-105 | AI-7 | O138-T | Room O138 Zone Temp | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | AI-8 | O140-T | Room O140 Zone Temp | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | DI-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DI-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DI-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DI-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DI-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DI-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | AO-1 | O120-Vlv | Room O120 FTR Valve Control | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | AO-2 | O124-Vlv | Room O124 FTR Valve Control | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | AO-9 | O127-Vlv | Room O127 FTR Valve Control | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | AO-10 | O128-Vlv | Room O128 FTR Valve Control | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | AO-11 | O130c-Vlv | Room O130c FTR Valve Control | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | AO-12 | O130-Vlv | Room O130 FTR Valve Control | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | AO-13 | O138-Vlv | Room O138 FTR Valve Control | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | AO-14 | O140-Vlv | Room O140 FTR Valve Control | Move to new controller CGM-61 | | | | | | |
| NAE-7 | N2-1 | DX-105 | DO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DO-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DO-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DO-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-105 | DO-8 | - | - | - | | | | | | |

**B106 Perimeter Heat Control**

**Temperature Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | DX-106 | AI-1 | Str3-T | Stair 3 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | UI-1 | Str3-T | Stair 3 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AI-2 | A102-T | Room A102 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | UI-2 | A102-T | Room A102 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AI-3 | A104-T | Room A104 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | UI-3 | A104-T | Room A104 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AI-4 | A106-T | Room A106 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | UI-4 | A106-T | Room A106 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AI-5 | A108-T | Room A108 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | UI-5 | A108-T | Room A108 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AI-6 | A116-T | Room A116 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | UI-6 | A116-T | Room A116 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AI-7 | A122-T | Room A122 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | UI-7 | - | - |
| NAE-7 | N2-1 | DX-106 | AI-8 | A124-T | Room A124 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | BI-1 | - | - |
| NAE-7 | N2-1 | DX-106 | DI-1 | - | - | - | SNE-2 | FC-1 | CGM-62 | BI-2 | - | - |
| NAE-7 | N2-1 | DX-106 | DI-2 | - | - | - | SNE-2 | FC-1 | CGM-62 | BO-1 | - | - |
| NAE-7 | N2-1 | DX-106 | DI-3 | - | - | - | SNE-2 | FC-1 | CGM-62 | BO-2 | - | - |
| NAE-7 | N2-1 | DX-106 | DI-4 | - | - | - | SNE-2 | FC-1 | CGM-62 | BO-3 | - | - |
| NAE-7 | N2-1 | DX-106 | DI-5 | - | - | - | SNE-2 | FC-1 | CGM-62 | CO-1 | Str3-Vlv | Stair 3 FTR Valve Control |
| NAE-7 | N2-1 | DX-106 | DI-6 | - | - | - | SNE-2 | FC-1 | CGM-62 | CO-2 | A102-Vlv | Room A102 FTR Valve Control |
| NAE-7 | N2-1 | DX-106 | DI-7 | - | - | - | SNE-2 | FC-1 | CGM-62 | CO-3 | A104-Vlv | Room A104 FTR Valve Control |
| NAE-7 | N2-1 | DX-106 | DI-8 | - | - | - | SNE-2 | FC-1 | CGM-62 | CO-4 | A106-Vlv | Room A106 FTR Valve Control |
| NAE-7 | N2-1 | DX-106 | AO-1 | Str3-Vlv | Stair 3 FTR Valve Control | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | AO-1 | A108-Vlv | Room A108 FTR Valve Control |
| NAE-7 | N2-1 | DX-106 | AO-2 | A102-Vlv | Room A102 FTR Valve Control | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | AO-2 | A116-Vlv | Room A116 FTR Valve Control |
| NAE-7 | N2-1 | DX-106 | AO-9 | A104-Vlv | Room A104 FTR Valve Control | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 UI-1 | A122-T | Room A122 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AO-10 | A106-Vlv | Room A106 FTR Valve Control | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 UI-2 | A124-T | Room A124 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AO-11 | A108-Vlv | Room A108 FTR Valve Control | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 UI-3 | A128-T | Room A128 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AO-12 | A116-Vlv | Room A116 FTR Valve Control | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 UI-4 | A130-T | Room A130 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AO-13 | A122-Vlv | Room A122 FTR Valve Control | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 UI-5 | A132-T | Room A132 Zone Temp |
| NAE-7 | N2-1 | DX-106 | AO-14 | A124-Vlv | Room A124 FTR Valve Control | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 UI-6 | - | - |
| NAE-7 | N2-1 | DX-106 | DO-3 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 UI-7 | - | - |
| NAE-7 | N2-1 | DX-106 | DO-4 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 BI-1 | - | - |
| NAE-7 | N2-1 | DX-106 | DO-5 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 BI-2 | - | - |
| NAE-7 | N2-1 | DX-106 | DO-6 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 BO-1 | - | - |
| NAE-7 | N2-1 | DX-106 | DO-7 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 BO-2 | - | - |
| NAE-7 | N2-1 | DX-106 | DO-8 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 BO-3 | - | - |
| NAE-7 | N2-1 | DX-107 | AI-1 | A128-T | Room A128 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 CO-1 | A122-Vlv | Room A122 FTR Valve Control |
| NAE-7 | N2-1 | DX-107 | AI-2 | A130-T | Room A130 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 CO-2 | A124-Vlv | Room A124 FTR Valve Control |
| NAE-7 | N2-1 | DX-107 | AI-3 | A132-T | Room A132 Zone Temp | Move to new controller CGM-62 | SNE-2 | FC-1 | CGM-62 | XPM1 CO-3 | A128-Vlv | Room A128 FTR Valve Control |
| NAE-7 | N2-1 | DX-107 | AI-4 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 CO-4 | A130-Vlv | Room A130 FTR Valve Control |
| NAE-7 | N2-1 | DX-107 | AI-5 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 AO-1 | A132-Vlv | Room A132 FTR Valve Control |
| NAE-7 | N2-1 | DX-107 | AI-6 | - | - | - | SNE-2 | FC-1 | CGM-62 | XPM1 AO-2 | - | - |
| NAE-7 | N2-1 | DX-107 | AI-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | AI-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DI-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DI-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DI-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DI-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DI-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DI-8 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | AO-1 | A128-Vlv | Room A128 FTR Valve Control | Move to new controller CGM-62 | | | | | | |
| NAE-7 | N2-1 | DX-107 | AO-2 | A130-Vlv | Room A130 FTR Valve Control | Move to new controller CGM-62 | | | | | | |
| NAE-7 | N2-1 | DX-107 | AO-9 | A132-Vlv | Room A132 FTR Valve Control | Move to new controller CGM-62 | | | | | | |
| NAE-7 | N2-1 | DX-107 | AO-10 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | AO-11 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | AO-12 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | AO-13 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | AO-14 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DO-5 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DO-6 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DO-7 | - | - | - | | | | | | |
| NAE-7 | N2-1 | DX-107 | DO-8 | - | - | - | | | | | | |

**B106 Perimeter Heat Control**

**Temperature Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-175 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-63 | SNE-2 | FC-1 | CVM-63 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-175 | AI-2 | W164-T | Room W164 Zone Temp | Move to new controller CVM-63 | SNE-2 | FC-1 | CVM-63 | UI-2 | W164-T | Room W164 Zone Temp |
| NAE-7 | N2-1 | VMA-175 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-63 | UI-3 | - | - |
| NAE-7 | N2-1 | VMA-175 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-63 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-175 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-63 | SNE-2 | FC-1 | CVM-63 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-175 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-63 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-175 | AO-2 | W162-Vlv | Room W164 FTR Valve Control | Move to new controller CVM-63 | SNE-2 | FC-1 | CVM-63 | CO-1 | W164-Vlv | Room W164 FTR Valve Control |
| NAE-7 | N2-1 | VMA-175 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-63 | CO-2 | - | - |
| NAE-7 | N2-1 | VMA-175 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-175 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-175 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-175 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-175 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-175 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-175 | BO-5 | - | - | - | | | | | | |

**B106 VAV-E-1b-1 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-7 | N2-1 | VMA-176 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-64 | SNE-2 | FC-1 | CVM-64 | UI-1 | ZN-T | Zone Temp | |
| NAE-7 | N2-1 | VMA-176 | AI-2 | W165-T | Room W165 Zone Temp | Move to new controller CVM-64 | SNE-2 | FC-1 | CVM-64 | UI-2 | W165-T | Room W165 Zone Temp | |
| NAE-7 | N2-1 | VMA-176 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-64 | UI-3 | - | - | |
| NAE-7 | N2-1 | VMA-176 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-64 | BO-1 | - | - | |
| NAE-7 | N2-1 | VMA-176 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-64 | SNE-2 | FC-1 | CVM-64 | BO-2 | - | - | |
| NAE-7 | N2-1 | VMA-176 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-64 | BO-3 | - | - | |
| NAE-7 | N2-1 | VMA-176 | AO-2 | W165-Vlv | Room W165 FTR Valve Control | Move to new controller CVM-64 | SNE-2 | FC-1 | CVM-64 | CO-1 | W165-Vlv | Room W165 FTR Valve Control | |
| NAE-7 | N2-1 | VMA-176 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-64 | CO-2 | - | - | |
| NAE-7 | N2-1 | VMA-176 | BI-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-176 | BI-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-176 | BO-1 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-176 | BO-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-176 | BO-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-176 | BO-4 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-176 | BO-5 | - | - | - | | | | | | | |

**B106 VAV-E-1a-1 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-7 | N2-1 | VMA-178 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-66 | SNE-2 | FC-1 | CVM-66 | UI-1 | ZN-T | Zone Temp | |
| NAE-7 | N2-1 | VMA-178 | AI-2 | - | - | - | SNE-2 | FC-1 | CVM-66 | UI-2 | - | - | |
| NAE-7 | N2-1 | VMA-178 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-66 | UI-3 | - | - | |
| NAE-7 | N2-1 | VMA-178 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-66 | BO-1 | - | - | |
| NAE-7 | N2-1 | VMA-178 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-66 | SNE-2 | FC-1 | CVM-66 | BO-2 | - | - | |
| NAE-7 | N2-1 | VMA-178 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-66 | BO-3 | - | - | |
| NAE-7 | N2-1 | VMA-178 | AO-2 | - | - | - | SNE-2 | FC-1 | CVM-66 | CO-1 | - | - | |
| NAE-7 | N2-1 | VMA-178 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-66 | CO-2 | - | - | |
| NAE-7 | N2-1 | VMA-178 | BI-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-178 | BI-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-178 | BO-1 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-178 | BO-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-178 | BO-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-178 | BO-4 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-178 | BO-5 | - | - | - | | | | | | | |

**B106 VAV-P1-1-2 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-7 | N2-1 | VMA-180 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-68 | SNE-2 | FC-1 | CVM-68 | UI-1 | ZN-T | Zone Temp | |
| NAE-7 | N2-1 | VMA-180 | AI-2 | O114-T | Room O114 Zone Temp | Move to new controller CVM-68 | SNE-2 | FC-1 | CVM-68 | UI-2 | O114-T | Room O114 Zone Temp | |
| NAE-7 | N2-1 | VMA-180 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-68 | UI-3 | - | - | |
| NAE-7 | N2-1 | VMA-180 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-68 | BO-1 | - | - | |
| NAE-7 | N2-1 | VMA-180 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-68 | SNE-2 | FC-1 | CVM-68 | BO-2 | - | - | |
| NAE-7 | N2-1 | VMA-180 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-68 | BO-3 | - | - | |
| NAE-7 | N2-1 | VMA-180 | AO-2 | O114-Vlv | Room O114 FTR Valve Control | Move to new controller CVM-68 | SNE-2 | FC-1 | CVM-68 | CO-1 | O114-Vlv | Room O114 FTR Valve Control | |
| NAE-7 | N2-1 | VMA-180 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-68 | CO-2 | - | - | |
| NAE-7 | N2-1 | VMA-180 | BI-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-180 | BI-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-180 | BO-1 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-180 | BO-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-180 | BO-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-180 | BO-4 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-180 | BO-5 | - | - | - | | | | | | | |

**B106 VAV-P2-12-2 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-181 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-69 | SNE-2 | FC-1 | CVM-69 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-181 | AI-2 | Str2-T | Stair 2 Zone Temp | Move to new controller CVM-69 | SNE-2 | FC-1 | CVM-69 | UI-2 | Str2-T | Stair 2 Zone Temp |
| NAE-7 | N2-1 | VMA-181 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-69 | UI-3 | - | - |
| NAE-7 | N2-1 | VMA-181 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-69 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-181 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-69 | SNE-2 | FC-1 | CVM-69 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-181 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-69 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-181 | AO-2 | Str2-Vlv | Stair 2 FTR Valve Control | Move to new controller CVM-69 | SNE-2 | FC-1 | CVM-69 | CO-1 | Str2-Vlv | Stair 2 FTR Valve Control |
| NAE-7 | N2-1 | VMA-181 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-69 | CO-2 | - | - |
| NAE-7 | N2-1 | VMA-181 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-181 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-181 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-181 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-181 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-181 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-181 | BO-5 | - | - | - | | | | | | |

**B106 VAV-P2-12-4 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-182 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-70 | SNE-2 | FC-1 | CVM-70 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-182 | AI-2 | A130-T | Room A130 Zone Temp | Move to new controller CVM-70 | SNE-2 | FC-1 | CVM-70 | UI-2 | A130-T | Room A130 Zone Temp |
| NAE-7 | N2-1 | VMA-182 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-70 | UI-3 | - | - |
| NAE-7 | N2-1 | VMA-182 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-70 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-182 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-70 | SNE-2 | FC-1 | CVM-70 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-182 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-70 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-182 | AO-2 | A130-Vlv | Room A130 FTR Valve Control | Move to new controller CVM-70 | SNE-2 | FC-1 | CVM-70 | CO-1 | A130-Vlv | Room A130 FTR Valve Control |
| NAE-7 | N2-1 | VMA-182 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-70 | CO-2 | - | - |
| NAE-7 | N2-1 | VMA-182 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-182 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-182 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-182 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-182 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-182 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-182 | BO-5 | - | - | - | | | | | | |

**B106 VAV-A2-1b-1 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description |
| NAE-7 | N2-1 | VMA-183 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-71 | SNE-2 | FC-1 | CVM-71 | UI-1 | ZN-T | Zone Temp |
| NAE-7 | N2-1 | VMA-183 | AI-2 | A126-T | Room A126 Zone Temp | Move to new controller CVM-71 | SNE-2 | FC-1 | CVM-71 | UI-2 | A126-T | Room A126 Zone Temp |
| NAE-7 | N2-1 | VMA-183 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-71 | UI-3 | - | - |
| NAE-7 | N2-1 | VMA-183 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-71 | BO-1 | - | - |
| NAE-7 | N2-1 | VMA-183 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-71 | SNE-2 | FC-1 | CVM-71 | BO-2 | - | - |
| NAE-7 | N2-1 | VMA-183 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-71 | BO-3 | - | - |
| NAE-7 | N2-1 | VMA-183 | AO-2 | A126-Vlv | Room A126 FTR Valve Control | Move to new controller CVM-71 | SNE-2 | FC-1 | CVM-71 | CO-1 | A126-Vlv | Room A126 FTR Valve Control |
| NAE-7 | N2-1 | VMA-183 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-71 | CO-2 | - | - |
| NAE-7 | N2-1 | VMA-183 | BI-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-183 | BI-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-183 | BO-1 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-183 | BO-2 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-183 | BO-3 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-183 | BO-4 | - | - | - | | | | | | |
| NAE-7 | N2-1 | VMA-183 | BO-5 | - | - | - | | | | | | |

**B106 VAV-A2-1a-1 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | B106 VAV-A2-2-5 Control |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-7 | N2-1 | VMA-232 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-72 | SNE-2 | FC-1 | CVM-72 | UI-1 | ZN-T | Zone Temp | **VAV Control**<br>On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.<br>**Perimeter Heat Control**<br>The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint. |
| NAE-7 | N2-1 | VMA-232 | AI-2 | B214-T | Room B214 Zone Temp | Move to new controller CVM-72 | SNE-2 | FC-1 | CVM-72 | UI-2 | B214-T | Room B214 Zone Temp | |
| NAE-7 | N2-1 | VMA-232 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-72 | UI-3 | - | - | |
| NAE-7 | N2-1 | VMA-232 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-72 | BO-1 | - | - | |
| NAE-7 | N2-1 | VMA-232 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-72 | SNE-2 | FC-1 | CVM-72 | BO-2 | - | - | |
| NAE-7 | N2-1 | VMA-232 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-72 | BO-3 | - | - | |
| NAE-7 | N2-1 | VMA-232 | AO-2 | B214-Vlv | Room B214 FTR Valve Control | Move to new controller CVM-72 | SNE-2 | FC-1 | CVM-72 | CO-1 | B214-Vlv | Room B214 FTR Valve Control | |
| NAE-7 | N2-1 | VMA-232 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-72 | CO-2 | - | - | |
| NAE-7 | N2-1 | VMA-232 | BI-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-232 | BI-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-232 | BO-1 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-232 | BO-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-232 | BO-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-232 | BO-4 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-232 | BO-5 | - | - | - | | | | | | | |

| Original Controller(s) | | | | | | | New Controller(s) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NAE | Bus | Controller | Point | Short Name | Description | Disposition | NAE | Bus | Controller | Point | Short Name | Description | |
| NAE-7 | N2-1 | VMA-234 | AI-1 | ZN-T | Zone Temp | Move to new controller CVM-73 | SNE-2 | FC-1 | CVM-73 | UI-1 | ZN-T | Zone Temp | |
| NAE-7 | N2-1 | VMA-234 | AI-2 | B216-T | Room B216 Zone Temp | Move to new controller CVM-73 | SNE-2 | FC-1 | CVM-73 | UI-2 | B216-T | Room B214 Zone Temp | |
| NAE-7 | N2-1 | VMA-234 | AI-3 | - | - | - | SNE-2 | FC-1 | CVM-73 | UI-3 | - | - | |
| NAE-7 | N2-1 | VMA-234 | AI-4 | - | - | - | SNE-2 | FC-1 | CVM-73 | BO-1 | - | - | |
| NAE-7 | N2-1 | VMA-234 | AI-5 | SA-VP | Supply Delta P | Move to new controller CVM-73 | SNE-2 | FC-1 | CVM-73 | BO-2 | - | - | |
| NAE-7 | N2-1 | VMA-234 | AO-1 | - | - | - | SNE-2 | FC-1 | CVM-73 | BO-3 | - | - | |
| NAE-7 | N2-1 | VMA-234 | AO-2 | B216-Vlv | Room B216 FTR Valve Control | Move to new controller CVM-73 | SNE-2 | FC-1 | CVM-73 | CO-1 | B216-Vlv | Room B214 FTR Valve Control | |
| NAE-7 | N2-1 | VMA-234 | BI-1 | - | - | - | SNE-2 | FC-1 | CVM-73 | CO-2 | - | - | |
| NAE-7 | N2-1 | VMA-234 | BI-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-234 | BI-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-234 | BO-1 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-234 | BO-2 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-234 | BO-3 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-234 | BO-4 | - | - | - | | | | | | | |
| NAE-7 | N2-1 | VMA-234 | BO-5 | - | - | - | | | | | | | |

**B106 VAV-A2-2-2 Control**

**VAV Control**

On a zone call for cooling, modulate VAV damper for maximum flow. On a call for heating, modulate VAV damper to minimum flow.

**Perimeter Heat Control**

The controller shall modulate the perimeter radiation valve(s) to maintain each zone to its respective zone temperature setpoint.