

BOROUGH: QUEENS
BLOCK: 850, LOT: 300
OWNER: ASTORIA
GENERATING COMPANY, L.P.

482' - 9"

DRAINAGE BASIN
AREA

ACCESS
ROAD A1

MAIN ACCESS
GATE

RETAINING
WALL

CHAIN LINK
FENCE

AC FILTER
AC FILTER
AREA

ACCESS
ROAD A2

Lands Now of Formerly of
CONSOLIDATED EDISON
COMPANY OF NEW YORK,
INC.
Block 850 Lot 1

LIGHTNING
TOWER
FOUNDATION
TYP.

STORAGE
ENCLOSURE

PROPERTY
LINE

PERIMETER
FENCE TYP

ACCESS
ROAD B1

350' - 7 1/2"

Formerly of
CONSOLIDATED EDISON
COMPANY OF NEW YORK, INC.

SPARE
TRANSFORMER

CONVERTER STATION

ACCESS
ROAD B2

PROPERTY LINE

WORK AREA

(20) PARKING SPOTS, REFER
TO CIVIL DRAWINGS FOR
INFORMATION (FILED UNDER A
SEPARATE APPLICATION).

STATION
PARKING
AREA

96' - 10 1/2"

ACCESS
ROAD C1

TRANSFORMER
AREA

FIRE WATER PUMP, REFER TO
FIRE PROTECTION DRAWINGS
FOR INFORMATION. (FILED
UNDER A SEPARATE
APPLICATION)

FIRE WATER TANK, REFER TO
FIRE PROTECTION DRAWINGS
FOR INFORMATION. (FILED
UNDER A SEPARATE
APPLICATION)

FIRE WATER
TANK

159' - 8"

BOLLARDS TYP.

DIESEL TANK
AND GENERATOR

LIGHTING POLES, TYP.

DRY COOLING

SERVICE BUILDING

HVAC ROOM

AUX.
ENCLOSURE

MVS
ENCLOSURE

PROPERTY
LINE

PERIMETER
FENCE TYP

RETAINING
WALL

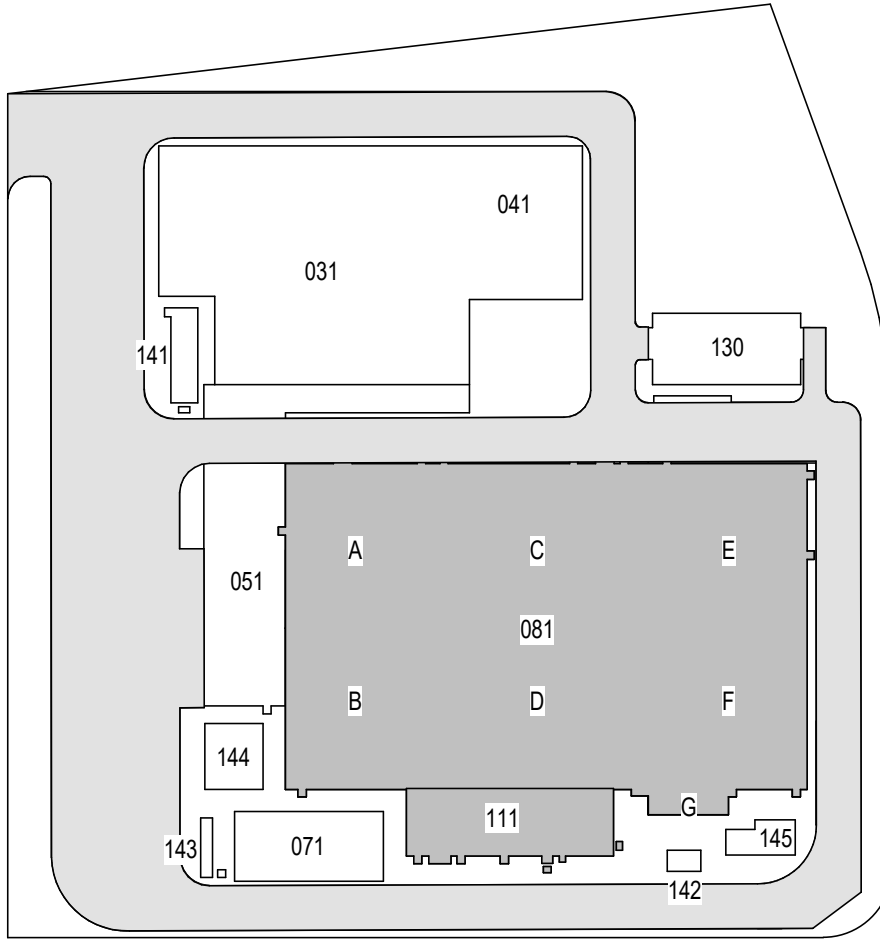
ACCESS
GATE 2

OUTDOOR EQUIPMENT, FILED
UNDER A SEPARATE
APPLICATION

1
A-212.00

OVERALL SITE PLAN Copy 1
1" = 30'-0"

ISSUED FOR PERMIT



KEY PLAN
N.T.S.



Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1604
New York, NY 10001



25 Mohawk Avenue
Sparta, NJ 07871

CONFIDENTIAL

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| | | | | |
|-----|--------------------|--------|--------|------------|
| B | FINAL SUBMISSION | RAC | ZH | 12/12/2022 |
| A | INTERIM SUBMISSION | RAC | ZH | 09/13/2022 |
| REV | DESCRIPTION | DRW BY | CHK BY | DATE |



Kiewit

470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677



Hitachi Energy

901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT



**Astoria HVDC
Converter Station**

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

OVERALL SITE PLAN



DATE 12/12/22
PROJECT NO 105121
DRAWING BY R. COLES
CHECKED BY Z. HARR
DRAWING NO
EN-000.00
CADD FILE NO
Astoria-HVDC-CHPE
Astoria-CHPE-111-ZZ-M3-A-001.rvt

12/21/2022 11:36:26 AM



COMcheck Software Version 4.1.5.5

Envelope Compliance Certificate

Project Information

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016)
Project Title: CHPE Astoria HVDC Converter Station
Location: New York, New York
Climate Zone: 4a
Project Type: New Construction
Performance Sim. Specs: EnergyPlus 8.1.0.009 (EPW: USA_NY_New.York-LaGuardia.AP.725030_TMY3.epw)

Construction Site: Owner/Agent: Transmission Developers Inc. Designer/Contractor: Kiewit

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
High Performance HVAC, 1.0 credit

| Building Area | Floor Area |
|--|------------|
| 1-Converter Halls (Warehouse) : Nonresidential | 75900 |
| 2-Service Bldg (Office) : Nonresidential | 5700 |

Envelope Assemblies

| Assembly | Gross Area or Perimeter | Cavity R-Value | Cont. R-Value | Proposed U-Factor | Budget U-Factor _{ie} |
|---|-------------------------|----------------|---------------|-------------------|-------------------------------|
| Roof 1: Insulation Entirely Above Deck, [Bldg. Use 1 - Converter Halls] | 32394 | --- | 35.0 | 0.028 | 0.030 |
| Roof 2: Other Metal Building Roof, [Bldg. Use 2 - Service Bldg] (b) | 1740 | --- | --- | 0.031 | 0.035 |
| NORTHEAST | | | | | |
| Exterior Wall 1: Other Metal Building Wall, [Bldg. Use 1 - Converter Halls] (b) | 14994 | --- | --- | 0.038 | 0.048 |
| A104D: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A104E: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 217 | --- | --- | 0.430 | 0.370 |
| A104G: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A104H: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A104I: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A104F: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| Exterior Wall 5: Other Metal Building Wall, [Bldg. Use 2 - Service Bldg] (b) | 1901 | --- | --- | 0.038 | 0.048 |
| B103: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg] | 35 | --- | --- | 0.360 | 0.370 |
| B102A: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg] | 35 | --- | --- | 0.360 | 0.370 |
| B101: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg] | 35 | --- | --- | 0.360 | 0.370 |
| SOUTHEAST | | | | | |
| Exterior Wall 2: Other Metal Building Wall, [Bldg. Use 1 - Converter Halls] (b) | 15291 | --- | --- | 0.038 | 0.048 |
| A103D: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A103E: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A102D: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A105A: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 42 | --- | --- | 0.430 | 0.370 |
| A104K: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck Page 1 of 12

| Assembly | Gross Area or Perimeter | Cavity R-Value | Cont. R-Value | Proposed U-Factor | Budget U-Factor _{ie} |
|---|-------------------------|----------------|---------------|-------------------|-------------------------------|
| A104J: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| Exterior Wall 6: Other Metal Building Wall, [Bldg. Use 2 - Service Bldg] (b) | 5345 | --- | --- | 0.038 | 0.048 |
| B115A: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg] | 144 | --- | --- | 0.360 | 0.370 |
| B108: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg] | 35 | --- | --- | 0.360 | 0.370 |
| B104: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg] | 35 | --- | --- | 0.360 | 0.370 |
| B203: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg] | 56 | --- | --- | 0.360 | 0.370 |
| SOUTHWEST | | | | | |
| Exterior Wall 3: Other Metal Building Wall, [Bldg. Use 1 - Converter Halls] (b) | 14994 | --- | --- | 0.038 | 0.048 |
| A103G: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A103A: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| Exterior Wall 7: Other Metal Building Wall, [Bldg. Use 2 - Service Bldg] (b) | 1901 | --- | --- | 0.038 | 0.048 |
| B114: Insulated Metal, Swinging, [Bldg. Use 2 - Service Bldg] | 21 | --- | --- | 0.360 | 0.370 |
| NORTHWEST | | | | | |
| Exterior Wall 4: Other Metal Building Wall, [Bldg. Use 1 - Converter Halls] (b) | 21319 | --- | --- | 0.038 | 0.048 |
| A103B: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 132 | --- | --- | 0.430 | 0.370 |
| A103C: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A101A: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A101B: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A101C: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A101D: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 132 | --- | --- | 0.430 | 0.370 |
| A104A: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A104B: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A104C: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |
| A101E: Insulated Metal, Swinging, [Bldg. Use 1 - Converter Halls] | 21 | --- | --- | 0.430 | 0.370 |

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Other components require supporting documentation for proposed U-factors.

Envelope PASSES: Design 1% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016) requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

SUZANNE SOWINSKI, AIA - LEAD ARCHITECT
Name - Title Signature Date 12/21/2022

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck Page 2 of 12



COMcheck Software Version 4.1.5.5

Inspection Checklist

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA

Requirements: 98.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

| Section # & Req.ID | Plan Review | Complies? | Comments/Assumptions |
|---|---|---|---|
| 4.2.2, 5.4.3.1.1, 5.7 [PR1] ¹ | Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed. | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6] ² | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%. | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 5.5.4.2.3 [PR7] ² | In buildings > 2,500 ft ² , any enclosed spaces directly under a roof with ceiling heights > 15 ft, and used as an office, lobby, atrium, concourse, corridor, storage (including nonrefrigerated warehouse), gymnasium, fitness/exercise area, playing area, gymnasium seating area, convention exhibit/event space, courtroom, automotive service, fire station engine room, manufacturing corridor/transition and bay areas, retail, library reading and stack areas, distribution/sorting area, transportation baggage and seating areas, or workshop, the following requirements apply: The daylight zone under skylights is >= half the floor area and (a) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40 or (b) the minimum skylight effective aperture >= 1 percent. The skylights have a measured haze value > 90 percent. | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 8.4.5 [PR11] ¹ | Electrical meters for tenant spaces in covered buildings. Each covered tenant space in a new building shall be equipped with a separate meter or sub-meter to measure the electrical consumption of such space when let or sublet. See section details and Section 28-311.2 of the Administrative Code. As new covered tenant spaces are created, they shall be equipped with meters or sub-meters as provided in this section | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck Page 3 of 12

| Section # & Req.ID | Plan Review | Complies? | Comments/Assumptions |
|-----------------------|--|---|---|
| 1 [PR12] ¹ | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options. | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck Page 4 of 12

| Section # & Req.ID | Footing / Foundation Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|------------------------------|--|---|---|---|---|
| 4.2.4 [F01] ² | Installed below-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. | R-_____ | R-_____ | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Envelope Assemblies table for values. |
| 4.2.4 [F03] ² | Installed slab-on-grade insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. | R-_____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated | R-_____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Envelope Assemblies table for values. |
| 5.5.3.5 [F05] ² | Slab edge insulation depth/length. | _____ ft | _____ ft | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Envelope Assemblies table for values. |
| 5.8.1.7 [F06] ² | Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities. | | | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 5.8.1.7.3 [F07] ² | Insulation in contact with the ground has <=0.3% water absorption rate per ASTM C272. | | | <input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck Page 5 of 12

ISSUED FOR PERMIT

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370 7th Avenue
SUITE 1604
New York, NY 10001

SOWINSKI SULLIVAN
ARCHITECTS & ENGINEERS

25 Mohawk Avenue
Sparta, NJ 07871

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| A | INTERIM SUBMISSION | RAC | ZH | 09/13/2022 |
| REV | DESCRIPTION | DRW | CHK | BY DATE |

Kiewit
470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

Astoria HVDC Converter Station

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

ENERGY COMPLIANCE ARCHITECTURAL-1



DATE: 12/12/22
PROJECT NO: 105121
DRAWING BY: Author
CHECKED BY: Designer
DRAWING NO: EN-001.00
CADD FILE NO: Astoria CHA-KE-111-22-M3-A-01.rvt

| Section # & Req.ID | Framing / Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|--|--|--|--|--|---|
| 5.4.3.2 [FR1] ¹ | Factory-built and site-assembled fenestration and doors are labeled or certified as meeting air leakage requirements. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 5.4.3.4 [FR4] ¹ | Vestibules are installed where building entrances separate conditioned space from the exterior, and meet exterior envelope requirements. Doors have self-closing devices, and are >=7 ft apart (>= 16 ft apart for adjoining floor area >= 40000 sq.ft.). Vestibule floor area <=7 50 sq.ft. or 2 percent of the adjoining conditioned floor area. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| 5.5.4.3a [FR8] ¹ | Vertical fenestration U-Factor. | U- ____ | U- ____ | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Envelope Assemblies table for values. |
| 5.5.4.3b [FR9] ¹ | Skylight fenestration U-Factor. | U- ____ | U- ____ | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Envelope Assemblies table for values. |
| 5.5.4.4.1 [FR10] ¹ | Vertical fenestration SHGC value. | SHGC: ____ | SHGC: ____ | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Envelope Assemblies table for values. |
| 5.5.4.4.2 [FR11] ¹ | Skylight SHGC value. | SHGC: ____ | SHGC: ____ | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Envelope Assemblies table for values. |
| 5.8.2.1, 5.8.2.3, 5.8.2.4, 5.8.2.5 [FR12] ¹ | Fenestration products rated (U-factor, SHGC, and VT) in accordance with NFRC or energy code defaults are used. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 5.8.2.2 [FR13] ¹ | Fenestration and door products are labeled, or a signed and dated certificate listing the U-factor, SHGC, VT, and air leakage rate has been provided by the manufacturer. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 5.5.3.6 [FR14] ¹ | U-factor of opaque doors associated with the building thermal envelope meets requirements. | U- ____ <input type="checkbox"/> Swinging <input type="checkbox"/> Nonswinging | U- ____ <input type="checkbox"/> Swinging <input type="checkbox"/> Nonswinging | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Envelope Assemblies table for values. |
| 5.4.3.1 [FR15] ¹ | Continuous air barrier is wrapped, sealed, caulked, gasketed, and/or taped in an approved manner, except in semiheated spaces. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck Page 6 of 12

| Section # & Req.ID | Framing / Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|-------------------------------|---|----------------------|----------------------|--|--------------------------|
| 5.4.3.1.3 [FR16] ¹ | Whole-building pressurization conducted by an independent third party. Measured air leakage rate of the building envelope <= 0.40 cm/fT2, with this air leakage rate normalized by the sum of the above and below-grade building envelope areas of the conditioned and semiheated space. R-2 buildings may alternatively show compliance through testing in accordance with Section R402.4.1.3 of the New York City Energy Conservation Code. See department rules and code section for conditional exceptions. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 5.4.4 [PR10] ¹ | Applications for construction document approval includes thermal bridge documentation including: 1) Clear field thermal bridges, 2) Point thermal bridges, 3) Linear thermal bridges. See section language for details. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck Page 7 of 12


| Section # & Req.ID | Rough-In Electrical Inspection | Complies? | Comments/Assumptions |
|---------------------------|--|--|--|
| 8.4.2 [EL10] ² | At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Receptacles intended for 24 hour operation of equipment. |
| 8.4.3 [EL11] ² | New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to to control system and displayed graphically. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck Page 8 of 12

ISSUED FOR PERMIT

 Engineering and Land Surveying, P.C.

370 7th Avenue
SUITE 1604
New York, NY 10001

 SOWINSKI SULLIVAN
ARCHITECTURE + ENGINEERING

25 Mohawk Avenue
Sparta, NJ 07871

CONFIDENTIAL

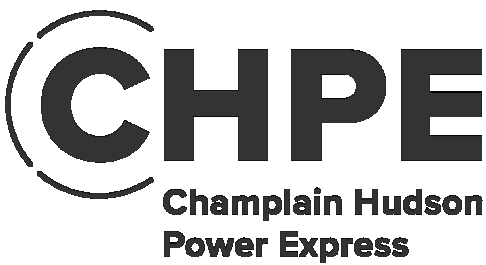
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PROJECT

 **CHPE**
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

31-445 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

**ENERGY COMPLIANCE
ARCHITECTURE-2**



DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer
DRAWING NO
EN-002.00
CADD FILE NO
Astoria CHPE-111-22-M3-A-001.rvt

| Section # & Req.ID | Final Inspection | Complies? | Comments/Assumptions |
|----------------------------|---|---|---|
| 5.4.3.3 (F11) ¹ | Weatherseals installed on all loading dock cargo doors in Climate Zones 4-8. | <div><input type="checkbox"/>Complies</div> <div><input type="checkbox"/>Does Not</div> <div><input type="checkbox"/>Not Observable</div> <div><input type="checkbox"/>Not Applicable</div> | Exception: Requirement does not apply. |
| 5.7.5 (F158) ¹ | Air barrier commissioning. Registered or approved agent provides evidence of air barrier commissioning including: 1) Construction documents that include documentation of the continuous air barrier components included in the design and a field inspection checklist that includes all requirements necessary for maintaining air barrier continuity and durability in accordance with Section 5.4.3.1; 2) Reports from field inspections during project construction showing compliance with continuous air barrier requirements. Air barrier continuity shall be determined by testing or inspecting each type of unique air barrier joint or seam in the building envelope for continuity and defects; 3) A final commissioning report indicating compliance with the continuous air barrier requirements shall be provided to the building owner and, upon request, to the code official. | <div><input type="checkbox"/>Complies</div> <div><input type="checkbox"/>Does Not</div> <div><input type="checkbox"/>Not Observable</div> <div><input type="checkbox"/>Not Applicable</div> | Requirement will be met. |

Additional Comments/Assumptions:

1 High Impact (Tier 1)

2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)

Project Title: CHPE Astoria HVDC Converter Station

Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck

Report date: 12/07/22

Page 11 of 12


Project Title: CHPE Astoria HVDC Converter Station

Data filename: C:\Users\jacarlson\Desktop\Astoria COMcheck.cck

Report date: 12/07/22

Page 12 of 12

ISSUED FOR PERMIT

Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1604
New York, NY 10001


SOWINSKI
SULLIVAN

25 Mohawk Avenue
Sparta, NJ 07871


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| B | FINAL SUBMISSION | RAC | ZH | 12/12/2022 |
| A | INTERIM SUBMISSION | RAC | ZH | 09/13/2022 |
| REV | DESCRIPTION | DRW BY | CHK BY | DATE |

Kiewit

470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677

Hitachi Energy

901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT


CHPE

Champlain Hudson
Power Express

Astoria HVDC
Converter Station

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

ENERGY COMPLIANCE
ARCHITECTURE-3

REGISTERED ARCHITECT
SUZANNE SOWINSKI
STATE OF NEW YORK
026048

DATE12/12/22

PROJECT NO105121

DRAWING BYAuthor

CHECKED BYDesigner

DRAWING NO

EN-003.00

CADD FILE NO
AstoriaHVDC-CHPE
AstoriaCHV-KIE-111-ZZ-M3-A-001.rvt



COMcheck Software Version 4.1.5.5

Mechanical Compliance Certificate

Project Information

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016)
Project Title: Astoria HVDC Converter Station
Location: New York, New York
Climate Zone: 4a
Project Type: New Construction

Construction Site: 31-45m20th Avenue
Astoria, NY 11105
Owner/Agent: Designer/Contractor: Kiewit

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
High Performance HVAC, 1.0 credit

Mechanical Systems List

Quantity System Type & Description

- 1 ACCU-111-01 A/B (Service) (Single Zone):
VRF Condensing Unit, Air Cooled Heat Pump
Heating Mode: Capacity = 18 kBtu/h
Proposed Efficiency = 12.00 HSPF, Required Efficiency = 8.47 HSPF
Cooling Mode: Capacity = 18 kBtu/h
Proposed Efficiency = 20.00 SEER, Required Efficiency = 14.30 SEER
Fan System: None
- 1 ACCU-111-02 (Service) (Single Zone):
VRF Condensing Unit, Air Cooled w/ Heat Recovery Heat Pump
Heating Mode: Capacity = 133 kBtu/h
Proposed Efficiency = 4.00 COP, Required Efficiency = 3.63 COP
Cooling Mode: Capacity = 120 kBtu/h
Proposed Efficiency = 20.70 EER, Required Efficiency = 11.86 EER + 15.8 IER
Fan System: None
- 1 ACCU-111-03 (Service) (Single Zone):
VRF Condensing Unit, Air Cooled w/ Heat Recovery Heat Pump
Heating Mode: Capacity = 108 kBtu/h
Proposed Efficiency = 4.30 COP, Required Efficiency = 3.63 COP
Cooling Mode: Capacity = 86 kBtu/h
Proposed Efficiency = 17.50 EER, Required Efficiency = 11.86 EER + 15.8 IER
Fan System: None
- 1 ACCU-111-04 (Service) (Single Zone):
VRF Condensing Unit, Air Cooled w/ Heat Recovery Heat Pump
Heating Mode: Capacity = 19 kBtu/h
Proposed Efficiency = 12.00 HSPF, Required Efficiency = 8.47 HSPF
Cooling Mode: Capacity = 18 kBtu/h
Proposed Efficiency = 20.00 SEER, Required Efficiency = 14.30 SEER
Fan System: None
- 1 AC-111-01A/B (Service) (Single Zone):
Cooling: 1 each - VRF Zone Fan Unit, Capacity = 16 kBtu/h
No minimum efficiency requirement applies
Fan System: AC-111-01A/B (Service - Compliance (Motor nameplate HP method) : Passes

Fans:
11101 Supply, Constant Volume, 459 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 1 of 19

Quantity System Type & Description

- 1 AC-111-02 and 03 (Service) (Single Zone):
Cooling: 2 each - VRF Zone Fan Unit, Capacity = 28 kBtu/h
No minimum efficiency requirement applies
Fan System: AC-111-02 and 03 (Service - Compliance (Motor nameplate HP method) : Passes

Fans:
AC1110203 Supply, Constant Volume, 855 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade
- 1 AC-111-04 through 15 (Service) (Single Zone):
Cooling: 12 each - VRF Zone Fan Unit, Capacity = 12 kBtu/h
No minimum efficiency requirement applies
Fan System: AC-111-04 through 15 (Service - Compliance (Motor nameplate HP method) : Passes

Fans:
AC1110415 Supply, Constant Volume, 307 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade
- 1 AC-111-16 (Service) (Single Zone):
Cooling: 1 each - VRF Zone Fan Unit, Capacity = 19 kBtu/h
No minimum efficiency requirement applies
Fan System: AC-111-16 (Service - Compliance (Motor nameplate HP method) : Passes

Fans:
AC11116 Supply, Constant Volume, 459 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade
- 1 AHU-081-010203 (Valve Hall) (Single Zone):
Heating: 2 each - Central Furnace, Electric, Capacity = 757 kBtu/h
No minimum efficiency requirement applies
Fan System: AHU-081-01, 02, 03 (Valve Hall - Compliance (Brake HP method) : Passes

Fans:
AHU081010203 Supply, Single-Zone VAV, 32000 CFM, 90.0 motor nameplate hp, 87.6 design brake hp (70.0 max. BHP), 80.0 fan efficiency grade
Pressure Drop Credits:
Particulate filtration credit: MERV 13 through 15, 15.6863 credit
Return and/or exhaust airflow control devices, 8.7148 credit
Energy recover device, other than Coil Runaround Loop, 14.6754 credit
Fully ducted return and/or exhaust air systems, 8.7146 credit
Particulate filtration credit: MERV 9 through 12, 8.7146 credit
Exhaust filters, scrubbers, or other exhaust treatment, 17.4292 credit
- 3 WH-111-0102, 03 (Service):
Electric Instantaneous Water Heater, Capacity: 0 gallons
No minimum efficiency requirement applies

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016) requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Alexander Zabolotsky, PE, Lead Mechanical Engineer
Name - Title Signature Date 12/12/2022

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 2 of 19



COMcheck Software Version 4.1.5.5

Inspection Checklist

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA

Requirements: 100.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

| Section # & Req.ID | Plan Review | Complies? | Comments/Assumptions |
|--------------------------------|---|--|---|
| 4.2.2, 6.4.4.2.1, 6.7.2 [PR2]¹ | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 4.2.2, 7.7.1, 10.4.2 [PR3]¹ | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 4.2.2, 8.4.1.1, 8.7 [PR6]² | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.4 [PR5]¹ | Detailed instructions for HVAC systems commissioning included on the plans or specifications for projects >=50,000 ft². | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 8.4.5 [PR11]³ | Electrical meters for tenant spaces in covered buildings. Each covered tenant space in a new building shall be equipped with a separate meter or sub-meter to measure the electrical consumption of such space when let or sublet. See section details and Section 28-311.2 of the Administrative Code. As new covered tenant spaces are created, they shall be equipped with meters or sub-meters as provided in this section. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 11 [PR12]² | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 3 of 19

ISSUED FOR PERMIT

Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1604
New York, NY 10001

SOWINSKI
SULLIVAN
ARCHITECTURE & ENGINEERING

25 Mohawk Avenue
Sparta, NJ 07871

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| A | INTERIM SUBMISSION | RAC | ZH | 09/13/2022 |
| REV | DESCRIPTION | DRW BY | CHK BY | DATE |

Kiewit

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Raleigh, North Carolina 27606

PROJECT

CHPE
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Power Express

Astoria HVDC Converter Station

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

ENERGY COMPLIANCE MECHANICAL-1

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer
DRAWING NO

EN-004.00

CADD FILE NO
Astoria-HVDC-CHPE
Astoria-CHPE-111-22-M3-A-001.rvt

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 4 of 19

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 5 of 19

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|--|---|----------------------|----------------------|--|---|
| 6.4.1.4 6.4.1.5 [ME1] ¹ | HVAC equipment efficiency verified. Non-NAECA HVAC equipment labeled as meeting 90.1. | Efficiency: _____ | Efficiency: _____ | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Mechanical Systems list for values. |
| 6.4.3.4.1 [ME3] ¹ | Stair and elevator shaft vents have motorized dampers that automatically close. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.3.4.2 6.4.3.4.3 [ME4] ¹ | Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.4.5 [ME39] ¹ | Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.3.4.4 [ME5] ¹ | Ventilation fans >0.75 hp have automatic controls to shut off fan when not required. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.8 [ME6] ¹ | Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.3.2.1 [ME40] ¹ | DX cooling systems >= 75 kBtu/h (>= 65 kBtu/h effective 1/2016) and chilled-water and evaporative cooling fan motor hp >= 1/2 designed to vary supply fan airflow as a function of load and comply with operational requirements. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. See the Mechanical Systems list for values. |
| 6.4.4.1.1 [ME7] ¹ | Insulation exposed to weather protected from damage. Insulation outside of the conditioned space and associated with cooling systems is vapor retardant. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.4.1.2 [ME8] ¹ | HVAC ducts and plenums insulated per Table 6.8.2. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection. | R-_____ | R-_____ | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.4.1.3 [ME9] ¹ | HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection. | _____ in. | _____ in. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |

1 | High Impact (Tier 1)

2 | Medium Impact (Tier 2)

3 | Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
Page 6 of 19

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|---------------------------------|--|----------------------|----------------------|--|---|
| 6.5.3.6 [ME72] ¹ | Motors for fans >= 1/12 hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.3.4 [ME108] ¹ | Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.3.4 [ME108] ¹ | Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.3.4 [ME108] ¹ | Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |

1 | High Impact (Tier 1)

2 | Medium Impact (Tier 2)

3 | Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
Page 9 of 19

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|---|---|----------------------|----------------------|--|---|
| 6.4.1.4 [ME41] ¹ | Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.4.2.1 [ME10] ¹ | Ducts and plenums having pressure class ratings are Seal Class A construction. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.8.1.15, 6.8.1.16 [ME110] ¹ | Electrically operated DX DOAS units meet requirements per Tables 6.8.1-15 or 6.8.1-16. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.4.2.2 [ME11] ¹ | Ductwork operating >3 in. water column requires air leakage testing. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.4.2.2 [ME11] ¹ | Ductwork operating >3 in. water column requires air leakage testing. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.4.2.2 [ME11] ¹ | Ductwork operating >3 in. water column requires air leakage testing. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.4.2.2 [ME11] ¹ | Ductwork operating >3 in. water column requires air leakage testing. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.4.2.2 [ME11] ¹ | Ductwork operating >3 in. water column requires air leakage testing. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.4.2.2 [ME11] ¹ | Ductwork operating >3 in. water column requires air leakage testing. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.4.4.2.2 [ME11] ¹ | Ductwork operating >3 in. water column requires air leakage testing. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

1 | High Impact (Tier 1)

2 | Medium Impact (Tier 2)

3 | Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
Page 7 of 19

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|---------------------------------|--|----------------------|----------------------|--|---|
| 6.5.3.4 [ME108] ¹ | Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.3.4 [ME108] ¹ | Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.3.7 [ME109] ¹ | Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided >=5% of the required minimum outdoor air rate; b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment; or c) system includes exhaust air energy recovery complying with Section 6.5.6.1. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

1 | High Impact (Tier 1)

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3 | Low Impact (Tier 3)

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Report date: 12/07/22
Page 10 of 19

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|----------------------------------|--|----------------------|----------------------|--|---|
| 6.5.2.3 [ME19] ¹ | Dehumidification controls provided to prevent reheating, recooling, mixing of hot and cold airstreams or concurrent heating and cooling of the same airstream. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Use of a desiccant systems. |
| 6.5.2.4.1 [ME68] ¹ | Humidifiers with airstream mounted preheating jackets have preheat auto-shutoff value set to activate when humidification is not required. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.2.4.2 [ME69] ¹ | Humidification system dispersion tube hot surfaces in the airstreams of ducts or air-handling units insulated >= R-0.5. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.2.5 [ME70] ¹ | Preheat coils controlled to stop heat output whenever mechanical cooling, including economizer operation, is active. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.2.6 [ME106] ¹ | Units that provide ventilation air to multiple zones and operate in conjunction with zone heating and cooling systems are prevented from using heating or heat recovery to warm supply air above 80°F when representative building loads or outdoor air temperature indicate that most zones demand cooling. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.3.1.3 [ME74] ¹ | Fans have efficiency grade (FEG) >= 67. The total efficiency of the fan at the design point of operation <= 15% of maximum total efficiency of the fan. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.3.6 [ME72] ¹ | Motors for fans >= 1/12 hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.3.6 [ME72] ¹ | Motors for fans >= 1/12 hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.3.6 [ME72] ¹ | Motors for fans >= 1/12 hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |


1 | High Impact (Tier 1)

2 | Medium Impact (Tier 2)

3 | Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck
Report date: 12/07/22
Page 8 of 19

ISSUED FOR PERMIT

 Engineering and Land Surveying, P.C.
370 7th Avenue
SUITE 1604
New York, NY 10001

 SOWINSKI SULLIVAN
25 Mohawk Avenue
Sparta, NJ 07871

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| | | | | |
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| B | FINAL SUBMISSION | RAC | ZH | 12/12/2022 |
| A | INTERIM SUBMISSION | RAC | ZH | 09/13/2022 |
| REV | DESCRIPTION | DRW BY | CHK BY | DATE |

 **Kiewit**
470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677

 **Hitachi Energy**
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT  **CHPE**
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

**ENERGY COMPLIANCE
MECHANICAL-2**

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer
DRAWING NO
EN-005.00
CADD FILE NO
Astoria CHA-KE-111-22-M3-A-001.rvt

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|------------------------------|--|----------------------|----------------------|--|--------------------------|
| 6.5.3.7 [ME109] ¹ | Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment, or c) system includes exhaust air energy recovery complying with Section 6.5.6.1. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.3.7 [ME109] ² | Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment, or c) system includes exhaust air energy recovery complying with Section 6.5.6.1. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.3.7 [ME109] ³ | Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment, or c) system includes exhaust air energy recovery complying with Section 6.5.6.1. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 11 of 19

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|------------------------------|--|----------------------|----------------------|--|---|
| 6.5.3.7 [ME109] ¹ | Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment, or c) system includes exhaust air energy recovery complying with Section 6.5.6.1. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.3.3 [ME42] ¹ | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |
| 6.5.3.3 [ME42] ² | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |
| 6.5.3.3 [ME42] ³ | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |
| 6.5.3.3 [ME42] ¹ | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |
| 6.5.3.3 [ME42] ² | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |
| 6.5.3.3 [ME42] ³ | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |
| 6.5.3.3 [ME42] ¹ | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |
| 6.5.3.3 [ME42] ² | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |
| 6.5.3.3 [ME42] ³ | Multiple zone VAV systems with DDC or individual zone boxes have static pressure setpoint reset controls. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. <i>See the Mechanical Systems list for values.</i> |

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 12 of 19

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|-------------------------------|---|----------------------|----------------------|--|---|
| 6.5.4.2 [ME25] ¹ | HVAC pumping systems with >= 3 control valves designed for variable fluid flow (see section details). | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.6.1 [ME56] ¹ | Exhaust air energy recovery on systems meeting Tables 6.5.6.1-1, and 6.5.6.1-2. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.7.1 [ME100] ¹ | Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details). | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.7.1 [ME100] ² | Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details). | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.7.1 [ME100] ³ | Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details). | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.7.1 [ME100] ¹ | Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details). | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.7.1 [ME100] ² | Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details). | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.7.1 [ME100] ³ | Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transfer air (see section details). | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.5.7.2.1 [ME32] ¹ | Kitchen hoods >5,000 cfm have make up air >=50% of exhaust air volume. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.7.2.4 [ME49] ¹ | Approved field test used to evaluate design air flow rates and demonstrate proper capture and containment of kitchen exhaust systems. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.8.1 [ME34] ² | Unenclosed spaces that are heated use only radiant heat. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 7.4.2 [ME36] ² | Service water heating equipment meets efficiency requirements. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 13 of 19

| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|---------------------------------|--|----------------------|----------------------|--|--|
| 6.4.3.9 [ME63] ² | Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 60F. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.5.10 [ME73] ¹ | Doors separating conditioned space from the outdoors have controls that disable/reset heating and cooling system when open. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Building entrances have automatic closing devices. |
| 6.7.2.3.2.1 [ME53] ¹ | Mechanical systems, Renewable Systems, and SWH Commissioning: Air outlets and zone terminal devices have means for air balancing. See section details. | | | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Fans with fan motors of 1 hp (0.74 kW) or less. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 14 of 19


| Section # & Req.ID | Rough-In Electrical Inspection | Complies? | Comments/Assumptions |
|---------------------------|--|--|---|
| 8.4.2 [EL10] ¹ | At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 8.4.3 [EL11] ¹ | New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to to control system and displayed graphically. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 10.4.1 [EL9] ² | Electric motors meet requirements where applicable. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
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 Engineering and Land Surveying, P.C.

370 7th Avenue
SUITE 1604
New York, NY 10001

 SOWINSKI SULLIVAN
ARCHITECTURE + ENGINEERING

25 Mohawk Avenue
Sparta, NJ 07871

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| B | FINAL SUBMISSION | RAC | ZH | 12/12/2022 |
| A | INTERIM SUBMISSION | RAC | ZH | 09/13/2022 |
| REV | DESCRIPTION | DRW BY | CHK BY | DATE |

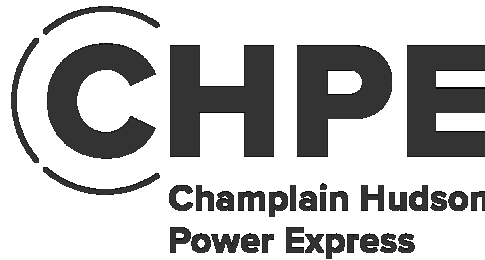
 Kiewit

470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677

 Hitachi Energy

901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

 CHPE
Champlain Hudson
Power Express

Astoria HVDC
Converter Station

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

ENERGY COMPLIANCE
MECHANICAL-3

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer

DRAWING NO

EN-006.00

CADD FILE NO
Astoria-HVDC-CHPE
Astoria-CHV-ME-111-ZZ-M3-A-001.rvt

| Section # & Req.ID | Final Inspection | Complies? | Comments/Assumptions |
|-------------------------------|---|--|--|
| 6.4.3.1.2 [F13] ¹ | Thermostatic controls have a 5 °F deadband. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.2 [F10] ¹ | Temperature controls have setpoint overlap restrictions. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.3.1 [F12] ¹ | HVAC systems equipped with at least one automatic shutdown control. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.3.2 [F122] ¹ | Setback controls allow automatic restart and temporary operation as required for maintenance. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.3.3 [F14] ¹ | Systems with setback controls and DDC include optimum start controls. Optimum start algorithm considers mass radiant slab floor temperature. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Systems designed for continuous operation. |
| 6.4.3.5 [F15] ¹ | Heat pump controls prevent supplemental electric resistance heat from coming on when not needed. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.5 [F15] ¹ | Heat pump controls prevent supplemental electric resistance heat from coming on when not needed. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.5 [F15] ¹ | Heat pump controls prevent supplemental electric resistance heat from coming on when not needed. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.5 [F15] ¹ | Heat pump controls prevent supplemental electric resistance heat from coming on when not needed. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.4.3.6 [F16] ¹ | When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited. Humidity control prohibits the use of fossil fuel or electricity to produce RH > 80% in the warmest zone humidified and RH < 60% in the coldest zone dehumidified. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Zones served by desiccant systems. |
| 6.7.2.1 [F17] ¹ | Furnished HVAC as-built drawings submitted within 90 days of system acceptance. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.2 [F18] ¹ | Furnished O&M manuals for HVAC systems within 90 days of system acceptance. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

☐ 1 High Impact (Tier 1) ☐ 2 Medium Impact (Tier 2) ☐ 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 16 of 19

| Section # & Req.ID | Final Inspection | Complies? | Comments/Assumptions |
|---------------------------------|---|--|---|
| 6.7.2.3 [F19] ¹ | An air and/or hydronic system balancing report is provided for HVAC systems serving zones >5,000 ft2 of conditioned area. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.4 [F110] ¹ | HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 7.4.4.3 [F111] ¹ | Public lavatory faucet water temperature <=110°F. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 10.4.3 [F124] ¹ | Elevators are designed with the proper lighting, ventilation power, and standby mode. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 7.4.3 [F145] ¹ | First 8 ft of outlet piping in nonrecirculating storage system, or branch piping connected to recirculated, heat traced, or impedance heated piping is insulated. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 6.7.2.3.1 [F128] ¹ | Mechanical systems, Renewable Systems, and SWH Commissioning: Commissioning plan developed by registered design professional or approved agency. See section details. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.3.3.1 [F131] ¹ | Mechanical systems, Renewable Systems, and SWH Commissioning: HVAC equipment has been tested to ensure proper operation. See section details. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.3.3.2 [F110] ¹ | Mechanical systems, Renewable Systems, and SWH Commissioning: HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls. See section details. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.3.4 [F129] ¹ | Mechanical systems, Renewable Systems, and SWH Commissioning: Preliminary commissioning report completed and certified by registered design professional or approved agency. See section details. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.3.5.1 [F17] ¹ | Mechanical systems, Renewable Systems, and SWH Commissioning: Furnished HVAC as-built drawings submitted within 90 days of system acceptance. See section details. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.3.5.3 [F143] ¹ | Mechanical systems, Renewable Systems, and SWH Commissioning: An air and/or hydronic system balancing report is provided for HVAC systems. See section details. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 6.7.2.3.5.4 [F130] ¹ | Mechanical systems, Renewable Systems, and SWH Commissioning: Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy. See section details. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |

☐ 1 High Impact (Tier 1) ☐ 2 Medium Impact (Tier 2) ☐ 3 Low Impact (Tier 3)


Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 17 of 19

Additional Comments/Assumptions:

☐ 1 High Impact (Tier 1) ☐ 2 Medium Impact (Tier 2) ☐ 3 Low Impact (Tier 3)

Project Title: Astoria HVDC Converter Station Report date: 12/07/22
Data filename: C:\Users\Alexander.Zabolotsky\Downloads\Astoria COMcheck.cck Page 18 of 19

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SUITE 1604
New York, NY 10001

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ARCHITECTURE & ENGINEERING

25 Mohawk Avenue
Sparta, NJ 07871

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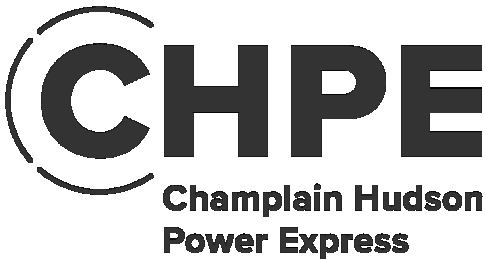
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|-----|--------------------|--------|--------|------------|
| B | FINAL SUBMISSION | RAC | ZH | 12/12/2022 |
| A | INTERIM SUBMISSION | RAC | ZH | 09/13/2022 |
| REV | DESCRIPTION | DRW BY | CHK BY | DATE |

 **Kiewit**
470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677

 **Hitachi Energy**
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

 **CHPE**
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

**ENERGY COMPLIANCE
MECHANICAL-4**

DATE 12/12/22
PROJECT NO 105121
DRAWING BY Author
CHECKED BY Designer

DRAWING NO

EN-007.00

CADD FILE NO
Astoria-HVDC-CHPE
Astoria-CHV-KIE-111-ZZ-M3-A-001.rvt



COMcheck Software Version 4.1.5.5 Interior Lighting Compliance Certificate

Project Information

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016)
Project Title: CHPE Astoria Power Converter Station
Project Type: New Construction

Construction Site: Owner/Agent: Transmission Developers Inc. Designer/Contractor: Kiewit

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Allowed Interior Lighting Power

| A Area Category | B Floor Area (ft2) | C Allowed Watts / ft2 | D Allowed Watts (B X C) |
|-------------------------------|--------------------------|-----------------------------|-------------------------------|
| 1-Converter Halls (Warehouse) | 75000 | 0.37 | 28007 |
| 2-Service Bldg (Office) | 5700 | 0.62 | 3540 |
| Total Allowed Watts = | | | 31547 |

Proposed Interior Lighting Power

| A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast | B Lamps/ Fixture | C # of Fixtures | D Fixture Watt. | E (C X D) |
|--|------------------------|-----------------------|-----------------------|--------------|
| 1-Converter Halls (Warehouse) LED 4: P1: LED Other Fixture Unit 103W: | 1 | 57 | 100 | 5700 |
| 2-Service Bldg (Office) LED 5: S16: LED Linear 33W: | 1 | 71 | 37 | 2627 |
| LED 6: HEM: LED Linear 33W: | 1 | 12 | 59 | 708 |
| LED 7: G22: LED Linear 33W: | 1 | 5 | 41 | 205 |
| LED 8: A4: LED Panel 19W: | 1 | 4 | 22 | 88 |
| LED 9: EG4: LED Other Fixture Unit 48W: | 1 | 54 | 48 | 2592 |
| LED 10: A1: LED Panel 36W: | 1 | 17 | 36 | 612 |
| Total Proposed Watts = | | | 12632 | |

Interior Lighting PASSES: Design 60% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016) requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

Project Title: CHPE Astoria Power Converter Station Report date: 12/09/22
Data filename: C:\Users\Daniel.Duzan\OneDrive - Kiewit Corporation\Documents\ASTORIA\comcheck\Astoria Page 1 of 7
COMcheck.cck



COMcheck Software Version 4.1.5.5 Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016)
Project Title: CHPE Astoria Power Converter Station
Project Type: New Construction
Exterior Lighting Zone: 3 (Other (LZ3))

Construction Site: Owner/Agent: Transmission Developers Inc. Designer/Contractor: Kiewit

Allowed Exterior Lighting Power

| A Area/Surface Category | B Quantity | C Allowed Watts / Unit | D Tradable Wattage | E Allowed Watts (B X C) |
|--|---------------|--|--------------------------|-------------------------------|
| Guarded facility, entrance/inspection area | 241130 ft2 | 0.5 | No | 120565 |
| | | Total Tradable Watts (a) = | | 0 |
| | | Total Allowed Watts = | | 120565 |
| | | Total Allowed Supplemental Watts (b) = | | 600 |

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 500 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

| A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast | B Lamps/ Fixture | C # of Fixtures | D Fixture Watt. | E (C X D) |
|---|------------------------|---------------------------------|-----------------------|--------------|
| Guarded facility, entrance/inspection area (241130 ft2): Non-tradable Wattage LED 11: WP1: LED Roadway-Parking Unit 42W: | 1 | 36 | 36 | 1296 |
| LED 12: LED Roadway-Parking Unit 233W: | 1 | 38 | 321 | 11556 |
| | | Total Tradable Proposed Watts = | | 0 |

Exterior Lighting PASSES: Design 0.0% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2020 New York City Energy Conservation Code, Appendix CA (modified 90.1-2016) requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

Project Title: CHPE Astoria Power Converter Station Report date: 12/09/22
Data filename: C:\Users\Daniel.Duzan\OneDrive - Kiewit Corporation\Documents\ASTORIA\comcheck\Astoria Page 2 of 7
COMcheck.cck



COMcheck Software Version 4.1.5.5 Inspection Checklist

Energy Code: 2020 New York City Energy Conservation Code, Appendix CA

Requirements: 100.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

| Section # & Req.ID | Plan Review | Complies? | Comments/Assumptions |
|-------------------------------------|---|--|--|
| 4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6]? | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 4.2.2, 9.4.3, 9.7 [PR4]? | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 9.7 [PR8]? | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 8.4.5 [PR11]? | Electrical meters for tenant spaces in covered buildings. Each covered tenant space in a new building shall be equipped with a separate meter or sub-meter to measure the electrical consumption of such space when let or sublet. See section details and Section 28-311.2 of the Administrative Code. As new covered tenant spaces are created, they shall be equipped with meters or sub-meters as provided in this section. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |
| 11 [PR12]? | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: CHPE Astoria Power Converter Station Report date: 12/09/22
Data filename: C:\Users\Daniel.Duzan\OneDrive - Kiewit Corporation\Documents\ASTORIA\comcheck\Astoria Page 3 of 7
COMcheck.cck

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370 7th Avenue
SUITE 1604
New York, NY 10001

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25 Mohawk Avenue
Sparta, NJ 08781

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| REV | DESCRIPTION | DRW BY | CHK BY | DATE |

Kiewit
470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

Astoria HVDC Converter Station

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

ENERGY COMPLIANCE ELECTRICAL-1

DATE: 12/12/22
PROJECT NO: 105121
DRAWING BY: Author
CHECKED BY: Designer

DRAWING NO:

EN-008.00

CADD FILE NO:
Astoria CHPE
Astoria CHPE-111-22-M3-A-001.rvt

| Section # & Req.ID | Final Inspection | Complies? | Comments/Assumptions |
|-----------------------------|---|--|--|
| 8.7.1 (F116) ¹ | Furnished as-built drawings for electric power systems within 30 days of system acceptance. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 8.7.2 (F117) ¹ | Furnished OCM instructions for systems and equipment to the building owner or designated representative. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Requirement will be met. |
| 9.2.2.3 (F118) ¹ | Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Interior Lighting fixture schedule for values. |
| 9.4.2 (F119) ¹ | Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Exterior Lighting fixture schedule for values. |
| 9.4.4 (F120) ¹ | At least 75% of all permanently installed lighting fixtures in dwelling units have >= 55 lm/W efficacy or a >= 45 lm/W total luminaire efficacy. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | Exception: Requirement does not apply. |

Additional Comments/Assumptions:

1 High Impact (Tier 1)


2 Medium Impact (Tier 2)

3 Low Impact (Tier 3)


Project Title: CHPE Astoria Power Converter Station Report date: 12/09/22
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Project Title: CHPE Astoria Power Converter Station Report date: 12/09/22
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370 7th Avenue
SUITE 1604
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SULLIVAN

25 Mohawk Avenue
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Block #850 - Lot #310 - BIN #4624437

ENERGY COMPLIANCE
ELECTRICAL-2

DATE

12/12/22

PROJECT NO

105121

DRAWING BY

Author

CHECKED BY

Designer

DRAWING NO

EN-009.00

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