**CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.**

**4 IRVING PLACE**

**NEW YORK, NY 10003**

**EP-7510-5**

**July 2015**

# Management of Merchant and Company Interconnection Projects

## PURPOSE

To provide guidelines for the planning, administration, implementation, monitoring, control, and close out of Merchant Transmission and Generation interconnection projects, under the terms of the NYISO Standard Large Facility Interconnection Procedures (Attachment X of the NYISO Open Access Transmission Tariff) and those Con Edison processes followed beyond the scope of Attachment X.

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**REVISION 5:**

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## 1.0 BACKGROUND

This procedure outlines the standards and expectations for accomplishing excellence in project management within the various CECONY departments responsible for implementation of Merchant Generation and Transmission Project Interconnections. CECONY has the obligation to support the handling of all such Projects in a non-discriminatory manner and will treat all Developers whether internal or external equally. To ensure successful project management, all departments associated with such projects shall internalize the 5 phases of Project Management, the phases are: Project Initiation, Project Scope and Funding, Engineering Design, Construction, and Project Closeout, as applicable, and as defined in this Procedure.

This procedure provides a means for Con Edison to document the process in complying with the NERC Standard, FAC-001, “Facility Connection Requirements.”

## 2.0 DEFINITIONS

Where definitions in this procedure ‘EP-7510’ and in the complementary Central Engineering procedure ‘CE-0301’ have the same title, they shall describe the same entity/function/person. This is to be noted in those cases where Transmission Planning and Central Engineering are involved in the same project.

2.1 **Advanced Planning Document (APD) –** An Engineering document that presents the problem statement, proposed solutions and includes justification for the project together with a preliminary work scope, and

service date.

2.2 **Asset Management Databases (AMD) –** Asset Management Databases are utilized for managing equipment maintenance, work prioritization and identifying and allocating labor resources. The Asset Management Databases are updated to accommodate system and equipment additions or modifications associated with capital projects.

2.3 **CECONY** - Consolidated Edison Company of New York, Inc.

2.4 **Central Operations Procedures** - (COPs) are Con Edison procedures that define the rules and guidelines for Central Operations organizations. They are management documents that help plan, organize, and control the functions that are performed as a matter of policy in Central Operations. Through COPs, management policy and responsibilities are communicated and consistently performed in such a way that it can be documented.

2.5 **Contract Summary Matrix -** A document maintained by the Transmission Planning department Interconnection Services section, that lists project specific information such as, the Project's NYISO queue #, type of contract entered, date of contract execution, due dates, types of deliverables, and associated completion dates.

2.6 **Construction Manager (CM) -** The individual assigned responsibility for reviewing project constructability, and managing the construction and equipment installation for a project in accordance with all applicable Con Edison EH&S requirements. The Construction Manager has authority over construction contractors and/or Con Edison personnel

assigned to perform construction tasks or manage construction work for the project. The Construction Manager is selected by the applicable construction organization with concurrence from the Project Manager. For smaller projects, the Construction Manager role may be a functional assignment to a qualified individual.

2.7 **Cost Estimates -** Developers and/or the NYISO may on occasion request that we supply information regarding the cost and/or schedule to complete work for Developer projects. On a case by case basis, depending on the type of information requested, and the availability of Corporate resources, we will evaluate whether the information requested can be supplied in the timeframe requested. Con Edison supports the use of Detailed Engineering and Design Evaluation for the development of Project Cost and Schedules. The Con Edison Law Department has advised that the NYISO, by current tariff, is obligated to provide this information to the Developer and other market participants.

2.8 **Developer –** The entity requesting the interconnection of a merchant generation or transmission project to the Con Edison transmission system.

2.9 **Developer Welcome Kit -** The Developer Welcome Kit has been compiled by the Consolidated Edison Company of New York, Inc. (Con Edison) to provide Developers of Merchant Generation or Merchant Transmission projects an overview of the requirements and general guidelines to safely connect proposed facilities to Con Edison's electric transmission system. This Welcome Kit contains general schedule and technical requirements to help developers in their project development process.

2.10 **Discipline Engineer –** Individual engineers assigned to provide the technical expertise in a particular discipline (engineering field of study) to support project requirements and engineering deliverables.

2.11 **Engineering Service Request (ESR) -** An electronic form that provides a method to request services or support from Central Engineering in investigating a problem area and developing possible solutions.

2.12 **Facilities Study -** The Facilities Study is a two part study conducted by the NYISO to determine the necessary system upgrades and cost allocation among a class year of developers. It consists of a System Upgrade Facility Study, an Attachment Facilities Study, and a System Deliverability Upgrade Study which includes preliminary engineering design. The 'Company's respective responsible organizations will need to integrate information such as physical space/expansion capability, maintainability/needs assessment, evaluation of transmission/load relief provisions, and future Independent Power Provider (IPP) connection/expansion capability, and ensure these at a minimum are also evaluated.

2.13 **Feasibility Study –** The Feasibility Study is a preliminary assessment of the physical constructability of a proposed project, and evaluation of interconnection options. Representatives from Con Edison's Transmission Planning department coordinate with the Law Department during negotiation of the terms and conditions of a Feasibility Study Agreement (FESA). The FESA details the deliverables that will comprise the Feasibility Study report. During the Feasibility Study

stage, Transmission Planning is responsible for conducting a substation bus flow analysis to identify substation components, such as breakers, disconnect switches, and bus sections, which may require upgrades to accommodate the Developer's project. Central Engineering is tasked with the evaluation of the feasibility or constructability of the Developers proposed interconnection scheme and one line drawing, providing a physical arrangement drawing, identifying cable routing concerns, and environmental issues inside the developer selected substation.

Although the NYISO OATT Attachment X states that in some instances the Feasibility Study may be waived, it is Con Edison's policy that the Feasibility Study always be performed to ensure that any possible problems be identified at an early stage of the project

2.14 **Interconnection Request -** Developers initiation of the interconnection process, by notifying the NYISO of the proposed project.

2.15 **Interconnection Agreement** - The Interconnection Agreement (IA) is a legally binding contract between the Merchant Developer and Con Edison describing the point(s) of interconnection between the Developer's project and the Con Edison Transmission System, as well as the roles and responsibilities of each party regarding design, procurement, construction, and responsibilities for future maintenance and testing of the required Attachment Facilities and any System Upgrade Facilities. Projects interconnecting under the NYISO's Large Facility Interconnection Procedures are required to utilize the Pro Forma Interconnection Agreement approved by the FERC. Please note that the pro-forma tariff is developed for Generation and not transmission. Any use of the pro-forma for Transmission projects will

need to take an extra level of precaution and review.

2.16 **Master Services Agreement (MSA) –** A Master Services Agreement is a document that identifies the terms and conditions, roles and responsibilities for goods and services provided between Con Edison and a Developer.

2.17 **Project -** Work requiring engineering support that cannot be resolved through field or system engineering and results in a modification to a system, structure or component that typically requires multiple technical disciplines or corporate departments to complete.

2.18 **Project Information Package (PIP) –**Consists of information that may not be necessary for the construction of the project, but are required for long term reliable service. The Project Engineer ensures issuance, review, and approval of Project Information Packages during the various stages of the project with all items issues prior to project closeout.

2.19 **Project Manager (PM) -** The individual with overall responsibility for managing a project. On interconnection projects, the General Manager of Substation Operations Planning will assign a Project Manager upon notification by Transmission Planning that the Developer Project has entered the Facility Study Phase or has requested an Engineering & Procurement Agreement (E&P) or has requested to start the Interconnection Agreement (IA) negotiations. The Project Manager will review and comment on the Project's documentation to ensure that the scope of work, Con Edison's deliverables and time allocated for

review/approval of developer supplied project documentation are acceptable to Con Edison. The Project Manager, conjunction with Project Engineering and Transmission Planning, is also responsible for the coordination and control of Project documentation, between the Developer and Con Edison, to ensure that the terms and conditions, as set forth in the Interconnection Agreement, and/or the E&P, and/or Transaction Forms, and other associated Project documentation, are adhered to.

2.20 **Project Engineer (PE) -** The individual assigned responsibility to manage the design, including binding cost and schedule estimates, and other technical aspects of a project, including review of merchant designs. Central Engineering will assign a Project Engineer upon notification by Transmission Planning that the Developer Project has entered the Facility Study Phase or has requested an Engineering & Procurement Agreement (E&P) or has requested to start the Interconnection Agreement (IA) negotiations. The Project Engineer will review and comment on the Project's documentation to ensure that the information is acceptable to Con Edison.

2.21 **Project Team -** The group of individuals specifically selected to support a project. Project Team members bring special expertise to the project to ensure all aspects of the project receive the proper input and scrutiny.

2.22 **Project Documentation –** Documentation, including but not limited to, the Interconnection Request, Master Services Agreement (MSA), Transaction Form(s), Study Contracts, Interconnection Agreement (IA), and Power Purchase Agreement (PPA) if applicable, that describe the

roles, responsibilities and obligations of the Parties.

2.23 **System Reliability Impact Study (SRIS) –** The SRIS is a technical study which evaluates the Thermal, Stability, Short Circuit, Voltage and zonal transfer limit impacts of a proposed project on the NYCA Bulk Power System.

2.24 **Technical Services Agreement** – An Agreement between Con Edison and the NYISO describing the terms under which Con Edison will perform certain tasks as a part of NYISO interconnection studies as a subcontractor to the NYISO. The TSA does not compel Con Edison to perform any specific tasks. The tasks performed by Con Edison are based on negotiation between Con Edison and the NYISO on a case by case basis.

2.25 **Transaction Form (TF) –** A document that delineates the services between a Developer and Con Edison and can include design, engineering, equipment procurement and supply, and construction for the proposed interconnection, or portions thereof.

## 3.0 Project Phases

The individual phases of the Project, as specified in the NYISO Attachment X of the Open Access Transmission Tariff (OATT) are as follows:

- Interconnection Request
- Scoping Meeting

- Feasibility Study
- System Reliability Impact Study (SRIS)
- Facilities Study
- Large Generator Interconnection Agreement (IA)
- Construction

These phases are as prescribed in the latest available version of Attachment X, however due to ongoing Queue Process Improvements; the potential exists for the most recent NYISO tariff sheet revisions to not be captured in the current EP -7510 revision. Should such a situation arise the NYISO Attachment X tariff sheets will take precedence until such time that EP-7510 is revised.

3.1 **Submittal of the Interconnection Request -** The Interconnection Process begins with submittal by the Developer of an Interconnection Request to the NYISO.

3.2 **Scoping Meeting** - The Scoping meeting is attended by the Developer and NYISO in addition to representatives of Transmission Planning and Central Engineering.

3.3 **Feasibility Study** - The Feasibility Study comprises some preliminary analyses to be performed by the Developer as well as an assessment of physical feasibility for the proposed point of interconnection, which is done by Central Engineering. Typically, during this study phase, Transmission Planning will also conduct a bus flow evaluation to determine the thermal adequacy of substation equipment.

3.4 **System Reliability Impact Study (SRIS)** - This is a more detailed technical study than the Feasibility Study which assesses the effects of the **Merchant** Project on Thermal, Voltage, Stability and Short Circuit performance as well as transfer limit impact. Study results are reviewed by Transmission Planning and System Operations to ensure that all reliability concerns are captured.

**3.4.1 System Impact Study (SIS) –** Like the SRIS, this is a more detailed technical study to assess the effects of the **Company** Project on Thermal, Voltage, Stability and Short Circuit performance as well as transfer limit impact. Study results are reviewed by Transmission Planning and System Operations to ensure that all reliability concerns are captured.

3.5 **Facilities Study** - This is the final technical assessment in the NYISO process. The NYISO determines the required System Upgrade Facilities (SUF) and performs the cost allocation study to determine cost responsibility for the SUFs among the class year participants. In addition, a preliminary engineering design and cost estimate for the Attachment Facilities is prepared. This task is performed by Central Engineering.

3.6 **Large Generator Interconnection Agreement (IA) -** After completion of the Interconnection Facilities Study and the NYISO's Open Access Transmission Tariff Attachment S cost allocation process, the Developer may enter into a Standard Large Generator Interconnection Agreement or Standard Merchant Transmission Facility Interconnection Agreement as appropriate. Con Edison's Transmission Planning and

Legal representatives will meet with the Developer for development of the Interconnection Agreement terms and conditions. Depending on the type of interconnection, various departments will be involved with specifying details of the IA. These may include Real Estate, Environmental Health and Safety, Transmission Line Maintenance, Protective Systems Testing, Substation Operation, System Operations, Central Engineering and Project Management. Upon execution of the Interconnection Agreement, and/or any associated Transaction Forms, Transmission Planning will relinquish the leadership role of the Project related to construction, testing, startup and project closeout to the Project Manager. The Project Engineer will take the lead on any Equipment Procurement. However, **the Transmission Planning Department will remain the contractual point of contact for all communications between CECONY, the NYISO, and the Developer.**

**3.7 Construction** - Once the Interconnection Agreement has been executed, the Construction phase can begin, subject to any scheduling constraints. Dependent on how the responsibilities are assigned in the IA, Con Edison may have the responsibility to construct the Transmission Owner's Attachment Facilities and System Upgrade facilities. Various organizations, including Central Engineering, Construction, Substation Operations, System Operations and Purchasing will be involved in the planning, scheduling and implementation of the construction process as applied to these facilities.

## 4.0 Information Sharing and Major Departmental Roles

On a monthly basis, the Transmission Planning department hosts a meeting to discuss the status of proposed and ongoing interconnection

projects. Representation includes: Transmission Planning, Central Engineering, Law, Protective System Testing, Substation Operations, Energy Market Policy Group, System Operations, Distribution Engineering, and others as appropriate. One–line diagrams of the proposed interconnections, size and schedule of the project, and contractual issues are discussed. Meeting minutes are taken, marked "Confidential", and distributed to Team members and attendees. Meeting representatives are responsible for communicating up the chain in the respective organizations, and for maintaining the "Confidentiality" of the non-public portion of meeting minutes and content information. Meeting minutes are transmitted to those organizations representatives that could not participate, such that the information is communicated.

**NOTE:**
**It is the responsibility of all participating organizations to provide Transmission Planning Interconnection Services with any information which may have a material impact on the Project's outcome. Scheduling changes, construction updates and contractual issues are a non-exhaustive list of examples that would need to be brought to the attention of Transmission Planning Interconnection Services.**

4.1 **Transmission Planning (TP) –** The Transmission Planning (TP) department is Con Edison's representative in transactions between Merchant Developers and the NYISO. The Transmission Planning department receives from the NYISO, notification of interconnection requests and manages the process through the various study stages. Transmission Planning negotiates, with the assistance of the Law

department, the necessary contracts and agreements required to allow the safe interconnection of a Merchant Developer project to the Con Edison transmission system. Under the terms of the negotiated contractual obligations between Con Edison, the NYISO and the Developer, the Transmission Planning Department will either perform or review the technical studies required by the various stages of the interconnection process. The Transmission Planning department will disseminate relevant information to other Con Edison departments and solicit feedback and recommendations as to the potential impact of a Developers project on the Con Edison transmission system.

Transmission Planning will obtain input from respective organizations for work to be done during the feasibility study. Upon completion of the SRIS, Transmission Planning will review the reports and submit comments or approval to both the Developer and the NYISO. TP will submit the reports to System Operations for review, comments, and or approval. The study results are also discussed at monthly Interconnection Team meetings which are attended by the responsible organizations which include at minimum: Transmission Planning, Central Engineering, Law, System Operations, Substation Planning and Construction.

For each Interconnection Project, the manager of the Interconnection Services Department will assign a Project Lead. The Project Lead will be the single point of contact for all communications between Transmission Planning and other Con Edison departments, as well as with the Developer and the NYISO, for all matters pertaining to the assigned project. The Transmission Planning project lead is responsible for obtaining Billing Orders as required in accordance with corporate

instruction CE-650-1, closing billing orders, following up with Department Office personnel to ensure bills are issued within the prescribed timeframes, providing a copy of developer executed agreements to other departments for creation of their billing orders and posting of all pertinent information and issues to the Interconnection Services SharePoint site and supplying information required for preparing the Weekly Director Report . The Project Lead is responsible for the timely completion of all assigned contractual tasks, ensures that Executive briefings are scheduled when required, and that the NYISO and Developer are notified of task results.

**During all stages of the development process Interconnection Services will provide updates based on information available to Transmission Planning that may have a material impact to the project outcome. Interconnection Services will keep in contact with the parties involved in order to receive timely information regarding the project and then deliver these updates in a prompt manner such that they may be addressed.**

4.2 **Central Engineering (CE) –** The Central Engineering department is responsible for the approval, or development, of electrical, civil, and mechanical design packages. The Central Engineering department also evaluates the feasibility/constructability of Developer's proposed connection facilities. In some cases, specifically defined by contract, the responsible Con Edison department will: obtain required permits, procure long lead time equipment and construct some developer facilities as defined by agreements.

4.3 **Law Department -** The Law Department provides assistance to

Transmission Planning and the other applicable organizations in the preparation of the various study agreements, Master Services Agreements, Transaction Forms and Interconnection Agreements which are developed in the course of the interconnection process. They review proposed changes/modifications to the standard NYISO Interconnection Study Agreements proposed by Con Edison or the Developer. The Law Department is also consulted in matters of contract interpretation and other legal issues which may arise.

4.4 **System Operations/Substation Planning -** Early in the Interconnection Process, during the Monthly Interconnection Team meetings, System Operations and Substation Planning representatives are informed of the proposed projects. System Operations provides comments from an operating and contingency perspective. Substation Operations provides input on constructability of the project. As the project progresses, these organizations are also relied on to provide insights to any required outages of equipment and schedules for the interconnection of the proposed project.

4.5 **Construction -** Responsibilities and obligations are defined in the Interconnection Agreement, Master Services Agreement, and Transaction Form Documentation, as each Developer project poses unique requirements and activities.

## 5.0 Project Contractual Agreements

5.1 **Study Agreements** – Each interconnection study performed as a part of the Large Facility Interconnection Process is performed

under the terms of a three party agreement between the NYISO, the Developer and Con Edison. Interconnection study agreements are Pro Forma agreements approved by the FERC. These study agreements may be accompanied by a separate two party Study Work Agreement between the NYISO and Con Edison. The Study Work Agreement allows Con Edison to perform certain tasks as a subcontractor to the NYISO, pursuant to the terms of the Technical Services Agreement.

5.2 **Master Services Agreements and Transaction Forms** – Where a Developer may require Con Edison to provide certain services, goods and/or materials not covered by study agreements or the Interconnection Agreement, and Con Edison agrees to provide these services goods and/or materials, Con Edison and the Developer will execute a Master Services Agreement and one or more Transaction Form(s) to describe(s) the contractually binding financial reimbursement obligations, and responsibilities of the parties.

5.3 **Engineering & Procurement Agreement** – Prior to executing an Interconnection Agreement, the NYISO Open Access Transmission Tariff allows the Developer to request, and requires Con Edison to offer, an Engineering and Procurement agreement that authorizes Con Edison to begin engineering and procurement of long lead time items necessary for the establishment of the interconnection at the Developers cost.

5.4 **Confidentiality –** Upon notification by the NYISO of an Interconnection Request from a Developer, Con Edison will tender

to the Developer a Confidentiality Agreement, to allow Con Edison to provide information necessary to assist the Developer in choosing its Point of Interconnection.

Any non-public materials that are presented to Con Edison by the NYISO or Developer, that are requested to be held confidential, are to be treated in a manner consistent with the FERC Standards of Conduct. If such information is transmitted via email, the following footer (or similar statement) shall be added

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5.5 The Project Manager is responsible for the monitoring and control of Project Documentation to ensure that the obligations and responsibilities, as set forth in the Interconnection Agreement and Transaction Forms, are adhered to. Should a deviation from the analyzed and approved interconnection plan be identified, the Project Manager shall notify all Con Edison organizations to evaluate the impact, which may result in a formal notification to the Developer of the alleged design/contract deviation. In the event of such a deviation, the

Project Manager shall communicate the deviation to the Transmission Planning - Interconnection Services Section, the Law Department, and other affected organizations. Depending on the severity of the deviation, and the impacts to operation and reliability of the system, the appropriate Con Edison organizations will meet internally and communicate a corporate position to the Developer. The Developer will be responsible for correcting the deviation such that the project is in conformance with the Projects Documentation.

5.6 **In the event that a Developer project requires Con Edison to perform activities that are not included in the TF or IA as part of the Developer project**, the Project Engineer must 1) notify Transmission Planning – Interconnection Services Section, and the Legal department of the need for a new MSA, or an update to the existing Project MSA, TF, or IA, and 2) ensure the development of the appropriate Scoping Document for submittal for appropriations, in accordance with the Engineering Operations Manual, CE-0301, “Engineering and Construction Projects,”, and the preparation of the following preliminary design/conceptual drawings or sketches in accordance with Engineering Operations Manual, CE-0401, “Engineering Drawings, Material Lists, and Calculations,” to support field walk activities and project scope:

- **a.** Site Layout
- **b.** Equipment layout
- **c.** One-Line schematics and Piping and Instrument Diagrams (P&IDs).
- **d.** Project Milestones

5.7 The Project Manager arranges field walks with the Project Team, and based on feedback from the field walk participants, the Project Engineer will modify the scope, layout drawings, one-line schematics and P&IDs.

## 6.0 Engineering and Design of Interconnection Facilities by CECONY

6.1 The Pro Forma Interconnection Agreement provides the Developer with the option to construct or have Con Edison construct the Transmission Owners Attachment Facilities and System Upgrade Facilities.

6.2 Where Con Edison is responsible for the design and construction of the Transmission Owner Attachment Facilities and System Upgrade Facilities, Central Engineering assigns a Project Engineer, or Technical Lead, to manage the design phase of a project that impacts Con Edison owned assets and, at a minimum:

- **a.** Ensure the Advanced Planning Document is created
- **b.** Ensure the Property Record ruling is requested.
- **c.** Ensure the project has attained authorization in accordance with Corporate Policy, 000-1 “Delegation of Authorities”.
- **d.** Ensure Project records (i.e. engineering correspondence, design documents, permits, project reviews, evaluations and inspections) are retained in Project Explorer
- **e.** Provide engineering assistance to all phases of the Project from initiation through project closure.

6.3 The Project Engineer coordinates an environmental review with the User EH&S Manager, Construction EH&S, and appropriate members of the Project Team to identify potential environmental concerns and

ensure Site Investigation and Testing is conducted to mitigate concerns in accordance with the Engineering Operations Manual, CE-0302, “Engineering Evaluations, Reviews, and Inspections”.

6.4 The Lead Discipline Engineer prepares an Environmental and Safety Project Check List in accordance with CEHSP A11.03 “Environment, Health and Safety Considerations in Planning and Design of Project or Routine Work”, or any successor procedure. The Project Engineer ensures that the check list is completed in accordance with CEHSP A11.03 “Environment, Health and Safety Considerations in Planning and Design of Project or Routine Work” and utilized during the project design phase.

6.5 The Project Engineer addresses environmental test findings and results from site investigation and testing, completes the Scoping Document for submittal, and performs the following:

- **a.** Ensures affected drawings are updated.
- **b.** Reviews the Central Engineering Operations Manual, CE-0301,”Engineering and Construction Projects”, and ensures that all documents required to support the design and construction of the project are identified and entered into Project Explorer as applicable.
- **c.** Ensures Project estimates are developed when Corporately accepted.
- **d.** If the Project contains a capital project, ensures appropriation documents are prepared and submitted for approval.

6.6 The Project Engineer ensures general arrangement drawings are developed and issued as necessary. The Project Manager coordinates

design field walks with the Project Engineer, User, Construction Manager, and other relevant parties and

**a.** Identifies potential community concerns.
**b.** Ensures potential environmental concerns are being addressed.
**c.** Determines Project outage requirements.
**d.** Ensures potential constructability concerns are identified and addressed.

6.7 The Project Engineer ensures that the cognizant responsible engineers identify requirements for surface and subsurface investigations to support engineering design and, if additional investigations are required, requests the Construction Manager to contract the work and send results to engineering and:

**a.** Ensures an Environmental and Safety project checklist is prepared in accordance with CEHSP A11.03 “Environment, Health and Safety Considerations in Planning and Design of Project or Routine Work”, or any successor procedure.
**b.** Ensures all permits required to support the project are identified and permit applications are prepared.

6.8 The Project Engineer ensures drawings, specifications, and applicable databases are prepared, approved, and released in accordance with the outage requirements identified in the schedule for the following as required:

**a.** Civil/Structural.
**b.** Electrical.
**c.** Environmental.

**d.** Instrument and Control.

**e.** Mechanical.

**f.** Transmission.

6.9 The Project Engineer coordinates a Mid-Point design review in accordance with Engineering Operations Manual, CE-0302, “Engineering Evaluations, Reviews, and Inspections.”

6.10 The Project Engineer and discipline engineers determine what equipment is major and what additional equipment and materials are long lead procurement items, and perform the following:

**a.** Develop equipment specifications in accordance with Engineering Operations Manual, CE-0501, “Engineering Specifications”.

**b.** Ensure training requirements are identified.

**c.** Prepare major equipment purchase request letters and submit to Purchasing.

**d.** Prepare materials lists for long lead time materials in accordance with Engineering Operations manual, CE-0401,”Engineering Drawings, Material Lists, and Calculations.

6.11 The Project Manager ensures the required project assets are identified and integrated in the Asset Management Databases (AMD) where applicable.

6.12 The Project Manager requests that the appropriate organization assign a Construction Manager to review design constructability and manage the construction phase of the project.

6.13 The Project Manager requests that appropriate organizations identify members of a Project Team as required in the Engineering Operations Manual, CE-0301, “Engineering and Construction Projects”.

6.14 The Project Manager obtains concurrence from the Project Team for project schedule and estimate), and ensures:

**a.** Work orders for identified work groups are established.
**b.** Detailed project schedule is approved, issued, and maintained current.
**c.** Current Working Estimate (CWE) for the project is initiated and maintained throughout the Project.
**d.** Project appropriation is approved, if required.
**e.** That the appropriate company organizations are notified as to the cost responsibility for items such as:
6.14.1.e.1Ongoing O&M Costs.
6.14.1.e.2Incremental real estate tax obligations.
6.14.1.e.3Equipment title transfers.

6.15 The User Organization assures requisitions to Purchasing for major equipment, long lead materials, and construction contracts are issued.

6.16 Purchasing obtains proposals for major equipment and long lead time material items.

6.17 The Project Engineer coordinates technical evaluation of purchased equipment proposals with discipline engineers.

6.18 Purchasing performs the following functions:

**a.** Obtains required approvals and Request for Authorization to Purchase (RAP).
**b.** Conducts pre-award meetings and awards purchase orders.
**c.** Forwards vendor drawings to the Project Engineer for Project Team review, approval, and incorporation into construction packages as required.

6.19 Discipline Engineers review vendor drawings and technical information associated with purchased equipment and:

**a.** Ensure equipment/component fabrication is proceeding according to the schedule.
**b.** Update training requirements.
**c.** Working with the User Organization, prepares operating and maintenance descriptions, instructions, and specifications in accordance with CE-0501 “Engineering Specifications”.
**d.** Ensure Vendor submittals are considered in design and construction packages.
**e.** Engineering will coordinate the appropriate spare parts list, and provide maintenance requirements as part of the PIP package. SSO Planning will integrate the maintenance requirements into Maximo.

6.20 The Project Engineer coordinates the preparation of outage step drawings and outage step instructions for outage and non-outage work and obtains concurrence from the following:

**a.** Construction, or the Constructor Organization

**b.** User Organization

**c.** Test Group

**d.** System Operations.

6.21 The Project Manager coordinates meeting with the Project Team to establish in-service requirements and work sequence for physical electrical/mechanical tie-in to the existing systems, plant modifications, system outages, and system restoration and ensures outage windows are reserved in Outage Scheduling System.

6.22 The Project Engineer ensures the Construction Package and the appropriate Construction Specification is prepared for review, comment and is available in Project Explorer.

6.23 The Project Manager coordinates construction package review meetings in accordance with Engineering Operations Manual, CE-0302, “Engineering Evaluations, Reviews, and Inspections” with the Project Engineer, Construction Manager, Project Team, User Group/Organization, and all applicable working groups.

6.24 The Project Engineer ensures review comments are resolved, the construction packages are finalized and ensures the following are prepared by discipline engineers for issue in accordance with project milestones:

**1.** Relay settings

**2.** Equipment test letters

**3.** Functional testing requirements

**4.** Operating diagrams

**5.** Operating instructions

**6.** Station/System descriptions.

6.25 The Project Engineer ensures all permits required to support the project are obtained including environmental and building permits.

6.26 The Project Manager ensures the Construction Packages are issued to the Construction Manager.

## 7.0 Engineering and Design by Developer/NYISO

The LFIP provides Developers with the option to perform engineering, equipment procurement, and construction of Transmission Owner's Attachment Facilities and Stand Alone System Upgrade Facilities. Where the Developer is responsible for the design, engineering and construction of Transmission Owner Attachment Facilities and Stand Alone System Upgrade Facilities, any assistance provided by Con Edison will be described in the appendices to the Interconnection Agreement. Such assistance may include but is not limited to the review of construction packages, assistance in submitting outage requests to the NYISO and reviewing relay setting calculations.

## 8.0 Construction and Startup Testing

8.1 The Project Manager ensures Project start, construction, and completion are within schedule and cost projections, as appropriate, for Con Edison controlled activities in accordance with CI-291-2, "Project Management Process."

8.2 The Construction Manager prepares and issues requisitions to Purchasing for construction contracts, identifies any special conditions

for bidding, and designates one or more Construction Inspectors to the Project in accordance with CI-280-4, “Contract Management Administration of Construction, Service and Public Improvement/Interference Contracts” or any successor procedures and the Contract Administration Manual.

8.3 If work is to be performed by Central Operations personnel (Maintenance and Construction Services and/or Substation Operations), the respective Construction Manager(s) ensures work orders are issued and closed out for project work.

8.4 Purchasing performs the following tasks:

- **a.** Prepares bidder lists from the list of qualified contractors and issues invitations to bid, with input from the Project Manager assisted by the Project Team.
- **b.** Conducts pre-bid meetings and field visits.
- **c.** If required, coordinates with the Project Manager/Project Engineer to obtain clarifications to issues raised by bidders.
- **d.** Provide clarifications to bidders as required.
- **e.** If required, coordinates with the Project Engineer to perform technical evaluation of construction bid proposals in accordance with Engineering Operations manual, CE-0302, “Engineering Evaluations, Reviews, and Inspections.
- **f.** Conducts findings-of-fact meetings with Bid Check Estimating when discrepancies arise in bid submittals, and performs commercial evaluations.
- **g.** Identifies apparent successful bidder with input from the Project Manager.

**h.** Conducts a pre-award meeting with the successful bidder and the Project team, as required, to ensure there is a clear understanding of the project requirements.

**i.** Issue a purchase order to the successful bidder.

8.5 Typically, the Construction Manager ensures contractors perform the following in accordance with CI-280-4, “Administration of Construction, Service, and Public Improvement/Interference Contracts” or any successor procedures and the Contract Administration Manual:

**a.** Prepare and submit a site and job specific Environmental, Health and Safety Plan (eHASP).

**b.** Prepare and submit a Schedule and Work Plan for the activities specified in the project documentation such as the IA or TF.

8.6 The User EH&S Group, and the Construction EH&S Group jointly review and accept contractor’s site-specific eHASPs. The Construction Manager does not issue a “Notice to Proceed” until the contractor’s eHASP has been accepted, and all procurement issues resolved by Purchasing.

8.7 The Construction Manager ensures the contractor designates a competent and qualified, full-time site representative to implement the activities required in the eHASP.

8.8 The Construction Manager integrates construction schedule into the project schedule and Project Explorer.

8.9 The Construction Manager manages construction and oversees construction activities in accordance with CI-280-4, “Administration of Construction, Service, and Public Improvement/Interference Contracts” or any successor procedures and the guidance provided in the Contract Administration Manual, and:

**1.** Ensures environmental, health, and safety excellence is the primary goal in planning, organizing, directing, performing and controlling field activities.

- **a.** Goals relating to field activities shall emphasize safety, environmental concerns, and high levels of performance and productivity.

**2.** Controls the acceptance for delivery of vendor equipment and ensures all tests, including field trial tests, are completed.

**3.** Ensures the following

- **a.** If the project involves a facility that requires an outage, the Constructor completes non-outage civil/electrical/mechanical construction work so as not to impact outage windows.
- **b.** Constructor completes all component and system integrity tests in accordance with specifications, codes and engineering standards.
- **c.** Constructor completes outage work and system and equipment tie-ins in accordance with applicable drawings and instructions.
- **d.** User organization completes functional testing and commissioning of equipment.
- **e.** Constructor submits “as-built”

8.10 Certain Developer Projects will be constructed by work forces other than CECONY. In the event such work is carried out on Con Edison premises, the Developer and all Contractors are required to adhere to Con Edison construction standards and practices, as well as any specific terms and conditions specified in the applicable Transaction Form/Masters Service Agreement.

## 9.0 Project Closeout

9.1 The Project Engineer ensures issuance of the Project Information Package (PIP) which includes:

**1.** System/Engineering descriptions or updates.
**2.** Functional Testing requirements.
**3.** Preventative Maintenance requirements.
**4.** As listed in CE-0301 Paragraph 5.7.1

9.2 The Project Manager verifies that the training requirements have been identified and communicated to the applicable user groups. The user groups ensure the training curriculum has been developed and implemented.

9.3 The Project Manager ensures the Construction Manager, Project Engineer, applicable test groups, discipline engineers, and User prepare punch lists, and performs the following:

**a.** Consolidates punch lists into a master punch list.
**b.** Assigns responsibilities for resolving the punch list items
**c.** Ensures all items are resolved.

9.4 The Project Manager coordinates closeout inspections with the Project Engineer, Construction Manager, and User, and ensures that contractor performance evaluations are prepared and contractor exit interviews are conducted by Construction Management to review the performance evaluation as contractors work scope is completed.

9.5 The User issues acceptance letters for equipment and ensures all system or component integrity tests performed to satisfy specification or code requirements have been performed prior to putting equipment in-service.

9.6 The Project Manager ensures “As Constructed Drawings” have been prepared in accordance with CI-290-3, “Obtaining As Constructed Drawings.”

9.7 The Project Manager refers to CI-610-3, “Project Closeout Procedure” and closes out the project and ensures a Notice of Completion is submitted to Property Record for project closeout.

9.8 The Project Manager conducts post construction project review and ensures lessons learned are published and any resulting actions are assigned a responsible individual and tracked until completion as required.

## 10.0 References

CE-0301, “Engineering and Construction Projects” Jan, 2013

CE-0302, “Engineering Evaluations, Reviews, and Inspections” May, 2012

CE-0401, “Engineering Drawings, Material Lists, and Calculations” Oct, 2011

CE-0501, “Engineering Specifications” Dec, 2012

CEHSP A11.03, “Environment, Health and Safety Considerations in Planning and Design of Project or Routine Work” Feb, 2013

CI-280-1, “Administration of Construction, Service and Public Improvement/Interference Contracts” Feb, 2013.

CI-290-3, “Obtaining ‘As Constructed’ Drawings” Jun 2006

CI-291-2, “Project Management Process” Oct 2008

CI-610-1, “Capital Budget Process” Dec, 2011

CI-610-2, “General Equipment Budgets, Ordering, Control and Retirement” Feb, 2007

CI-610-3, “Project Closeout Procedure”, April 2003.

NYISO Open Access Transmission Tariff (OATT) Attachment S, Attachment X, and Attachment Y

Con Edison Developer Welcome Kit

***The following Engineering and System Operations Specifications and Procedures are provided in Attachment 3. This list is not exhaustive.***

ENGINEERING SPECIFICATION CE-ES-2002 - STANDARD ENGINEERING DESIGN GUIDELINES FOR AREA AND TRANSMISSION SUBSTATIONS SECTION III – SYSTEM/EQUIPMENT DESIGN REQUIREMENTS PART 2 RELAY PROTECTION

ENGINEERING SPECIFICATION CE-ES-2002 - STANDARD ENGINEERING DESIGN GUIDELINES FOR AREA AND TRANSMISSION SUBSTATIONS SECTION III – SYSTEM/EQUIPMENT DESIGN REQUIREMENTS PART 15 - 69, 138 AND 345 KV CIRCUIT BREAKERS

ENGINEERING SPECIFICATION CE-ES-2002 - STANDARD ENGINEERING DESIGN GUIDELINES FOR AREA AND TRANSMISSION SUBSTATIONS SECTION III – SYSTEM/EQUIPMENT DESIGN REQUIREMENTS PART 31 DISCONNECT SWITCHES, GROUND SWITCHES AND HIGH VOLTAGE BUS

SPECIFICATION NO. EI-2002-13, REV 4 STANDARD ENGINEERING DESIGN GUIDELINES AREA AND TRANSMISSION SUBSTATIONS PART XIII - DESIGN FOR THE ENVIRONMENT

SUBSTATION & TRANSMISSION ENGINEERING DEPARTMENT TRANSMISSION FEEDERS ENGINEERING SPECIFICATION EO-03 -PURCHASE SPECIFICATION FOR 138 KV SOLID DIELECTRIC CABLE SYSTEMS

CON EDISON SYSTEM OPERATION DEPARTMENT PROCEDURE NO.: SO 3–17-12; SUBJECT: “Minimum Oil Burn/Automatic Fuel Swapping Capability”

CON EDISON SYSTEM OPERATION DEPARTMENT PROCEDURE NO.: SO3-20-4; SUBJECT: NON-UTILITY GENERATORS (NUGS)

The FERC requires new Interconnections to utilize the Pro Forma Interconnection Agreement.

The Pro Forma Interconnection agreement does not address

- Minimum Oil Burn
- Incremental Real Estate Tax
- Construction Oversight Costs

Based on the specifics of the project, these may have to be addressed during negotiation of the Interconnection Agreement.

Transmission Planning
System and Transmission Operations