TP-7510-11

MANAGEMENT OF EXTERNAL AND COMPANY INTERCONNECTION PROJECTS

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Revision History

Version	Date	Revisions
11	12/10/2021	**Global** ➢ Reformatted Section 1 ➢ Broke Section 5 Information Sharing and Major Departmental Roles into two section; Section 5 Information Sharing and Section 6 Major Departmental Role ➢ Absorbed Section 7 Project Contractual Agreements into Section 3 Definitions ➢ Changed reference to Project Engineer to either Project Development and Delivery or Central Engineering Lead **Section 3** ➢ Added Project Contractual Agreement definitions ➢ Changed Project Engineer to Project Development and Delivery (PPD) **Section 4** ➢ Added additional details to sections 4.1-4.6, Added section 4.7 For Attachment P, Facilities Study, added details to section 4.9 Construction
10	12/17/2018	**Global** ➢ Renumbering of Sections to accommodate new Section 6.0 **Section 6.0** ➢ Added a new Section: 6.0: Balancing Authority Area's Metered Boundaries
9	07/01/2018	**Global** ➢ The title has been changed to "Management of External and Company Interconnection Projects" ➢ Modifications for accommodation of a new interconnection process for Transmission Projects in NYISO Open Access Transmission Tariff, Attachment P Transmission Interconnection Procedures

1.0 Purpose

To provide guidelines for the planning, administration, implementation, monitoring, control, and close out of:

- Large Generation project and Class Year Transmission project interconnections under the terms of the NYISO Standard Large Facility Interconnection Procedures (Attachment X of the NYISO Open Access Transmission Tariff)
- Transmission project interconnections under the terms of the NYISO Transmission Interconnection Procedures (Attachment P of the NYISO Open Access Transmission Tariff)
- Small Generation project interconnections under the terms of the NYISO Standard Small Facility Interconnection Procedures (Attachment Z of the NYISO Open Access Transmission Tariff)
- Con Edison projects under the terms of Section 3.7 of the NYISO Open Access Transmission Tariff
- Con Edison processes followed beyond the scope of the NYISO Open Access Transmission Tariff, as applicable.

2.0 Background

This procedure outlines the standards and expectations for accomplishing excellence in project management within the various CECONY departments responsible for implementation of Generation Project, Class Year Transmission Project, 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 Interconnection Requirements.”

3.0 Definitions

Where definitions in this procedure ‘TP-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.

3.1 **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.

3.2 **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.

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

3.4 **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.

3.5 **Class Year Interconnection Facilities Study** - The Class Year Interconnection 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 pursuant to Attachment X of NYISO Open Access Transmission Tariff (OATT). It determines costs of System Upgrade Facilities, Connecting Transmission Owner Attachment Facilities, and a System Deliverability Upgrades and includes their 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.

3.6 **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.

3.7 **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.

3.8 **Developer** – The entity requesting the interconnection of a Large Generation projects, Class Year Transmission projects, or Transmission projects to the Con Edison transmission system.

3.9 **Developer Project Status Report** - A document maintained by the Transmission Planning Department Interconnection Services section, that lists project specific information such as, the Project's NYISO queue #, Project's name, Developer's name, date of Confidentiality Agreement execution, open tasks, types of deliverables, and associated completion dates.

3.10 **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 Generation projects, Class Year Transmission projects, and other 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.

3.11 **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.

3.12 **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.

3.13 **Facilities Study** - The Facilities Study is a study conducted by the NYISO to determine a list of facilities required to reliably interconnect a Transmission Project, including Network Upgrade Facilities, the cost of those facilities, and the time required to reliably interconnect the Transmission project pursuant to Attachment P of NYISO OATT. 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.

3.14 **Interconnection Request** - Developer's initiation of a Generation project, Class Year Transmission project, or Transmission project interconnection process, by notifying the NYISO of the proposed project.

3.15 **Interconnection Agreement** - The Interconnection Agreement (IA) is a legally binding contract between the Generation Project Developer, Class Year Transmission Project Developer, or Transmission Project 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 or Network 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* Interconnection Agreement is developed for generation and not transmission. Any use of the *pro forma* Interconnection Agreement for Transmission Projects will need to take an extra level of

precaution and review.

3.16 **Optional Feasibility Study** – The Optional Feasibility Study (OFES) 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 review and comment on a study scope of the OFES and, if necessary, coordinate with the Law Department during negotiation of the terms and conditions of an OFES Study Work Agreement (SWA). The SWA details the Company's deliverables for the final OFES report. During the Optional Feasibility Study stage, Transmission Planning is responsible or 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.

3.17 **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.

3.18 **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.

3.19 **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 Central Engineering Lead ensures issuance, review, and approval of Project Information Packages during the various stages of the project with all items issues prior to project closeout.

3.20 **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 Development and Delivery 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.

3.21 **Project Development and Delivery (PDD)** - The Central Engineering

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

3.22 **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.

3.23 **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.

3.24 **System Impact Study (SIS)** – The SIS is a technical study which evaluates the impact of the proposed Transmission Project on the safety and reliability of the New York State Transmission System and, if applicable, an Affected System, to determine what Network Upgrade Facilities are needed for the proposed Transmission Project to connect reliably to the New York State Transmission System. Among others, it typically includes Thermal, Voltage, Stability, Short Circuit, and Interface Transfer Limit Analyses.

3.25 **System Reliability Impact Study (SRIS)** – The SRIS is a technical study which evaluates the impact of the proposed Large Generation Facility or Class Year Transmission Project on the safety and reliability of the New York State Transmission System and, if applicable, an Affected System, to determine what Attachment Facilities, Distribution Upgrades and System Upgrade Facilities are needed for the proposed Large Generation Facility or Class Year Transmission Project of the Developer to connect reliably to the New York State Transmission System or to the Distribution System. Among others, it typically includes Thermal, Voltage, Stability, Short Circuit, and Interface Transfer Limit Analyses.

3.26 **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.

3.27 **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.

3.28 **Transmission Developer** – The entity requesting the interconnection of a Transmission project to the Con Edison transmission system.

3.29 **Transmission Interconnection Application** - Developer's initiation of the Transmission interconnection process, by notifying the NYISO of the proposed project.

3.30 **Study Work Agreements** – Each interconnection study performed by Con Edison as a part of the Large Facility Interconnection Procedures or Transmission Project Interconnection Procedures is performed under the terms of a 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.

3.31 **Interconnection Facilities Study Agreements** – Each project in Class Year Interconnection Facilities Study is studied under the terms of a three-party Interconnection Facilities Study Agreement between the NYISO, the Developer and Con Edison.

3.32 **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.

3.33 **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 Developer's cost.

3.34 **Confidentiality Agreement** – 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 information transmitted via email, the confidentiality notices similar to the example given below shall be added:

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CONFIDENTIALITY NOTICE:
This E-mail message, and any attachments thereto, is intended only for use by the addressee(s) named herein and may contain legally privileged and/or non-public confidential information. If you are not the intended recipient of this E-mail message, you

are hereby notified that any dissemination, distribution or copying of this E-mail message, and any attachments thereto, or taking any actions in reliance upon the information contained herein, is strictly prohibited and may be unlawful. If you have received this E-mail message in error, please immediately notify me by return E-mail and permanently delete the original and any copy of this E-mail message, any attachments and any printouts thereof. Thank you.

3.35 **Project Documentation Monitoring and Control** – 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.

3.36 **Additional Activities** – 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's project, Project 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 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 List, and Calculations," to support field walk activities and project scope:

- Site Layout
- Equipment Layout
- One-Line Schematics and Piping and Instrument Diagrams (P&IDs)
- Project Milestones.

3.37 **Field Walks** – The Project Manager arranges field walks and the Project Team, and based on feedback from the field walk participants, the assigned Central Engineering Lead will modify the scope, layout drawings, one-line schematics, and P&IDs.

4.0 Project Phases

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

- Interconnection Request
- Scoping Meeting
- Optional Feasibility Study
- System Reliability Impact Study (SRIS)
- Class Year Interconnection Facilities Study
- Large Generator Interconnection Agreement (IA)
- Construction

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

- Transmission Interconnection Application
- Scoping Meeting
- Optional Feasibility Study
- System Impact Study (SIS)
- Facilities Study
- Transmission Project Interconnection Agreement (IA)
- Construction

On the rare occurrence that a small generation project proposes connection into the Transmission System, Con Edison will follow steps similar to those in the Attachment X process but in accordance the NYISO Standard Small Facility Interconnection Procedures (Attachment Z of the NYISO Open Access Transmission Tariff). Please see Attachment Z for more detail.

These phases are as prescribed in the latest available version of NYISO OATT, 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 TP -7510 revision. Should such a situation arise the NYISO OATT sheets will take precedence until such time that TP-7510 is revised.

4.1 **Submittal of the Interconnection Request or Transmission Interconnection Application** - The Interconnection Process begins with submittal by the Developer of an Interconnection Request or a Transmission Interconnection Application to the NYISO.

- The NYISO will inform Con Edison of an Interconnection Request located in the Con Edison Territory. The project is then assigned to a Lead Engineer in the Transmission Planning (TP) Interconnection Services Group.
- The TP Lead Engineer establishes themselves as Con Edison's person of contact and works with the designated person of contact from the Developer, and technical lead from the NYISO.

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

- The NYISO will send a meeting invitation to attend the Scoping Meeting.
- The TP Lead Engineer will ensure that the necessary parties in Con Edison are invited.

- The TP Lead Engineer confirms that all participants representing the Developing Company are covered under the Con Edison's project specific Confidentiality Agreement before any discussion of Con Edison Critical Energy Infrastructure Information (CEII).
- The TP Lead Engineer will represent Con Edison in the Scoping meeting.
- Upon the conclusion of the Scoping Meeting the Developer will decide which study they wish to participate in Optional Feasibility Study either or a System Reliability Impact Study.

4.3 **Optional Feasibility Study** - The Optional Feasibility Study is a preliminary evaluation of the system impact of the project, which is performed by the NYISO. The Developer has two choices a Limited Feasibility Study (LFES) or a Full Feasibility Study (FES).

- For a LFES, Con Edison performs work in accordance with the Study Work Agreement (SWA). This work typically consists of a review and approval of a developer's one-line diagram, a Bus Flow Analysis, and a Physical Feasibility Assessment. Con Edison performs work in accordance with the Study Work Agreement (SWA).
- For a FES, Con Edison performs work in accordance with the executed Study Work Agreement (SWA) between Con Edison and the NYISO. This work typically consists of a review and acceptance of a developer's one-line diagram, review of Con Edison's system representation in modeling databases, review of contingency definitions , review and update of lowest breaker rating as requested by the NYISO, a Bus Flow Analysis, and a Physical Feasibility Assessment.
- The TP Lead Engineer reviews and comments on Study Scope prior to Con Edison's Execution. The TP Lead Engineer will also coordinate the concurrence to perform the tasks in the Study Work Agreement before sending the signed Study Work Agreement to the NYISO for execution. Once the Study Work Agreement is executed Con Edison will perform the tasks in the Study Work Agreement upon receiving all necessary information from the NYISO. The TP Lead Engineer will provide all deliverables to the NYISO. When the NYISO releases the Study Report the TP Lead Engineer will review and comment before the NYISO finalizes the study.

4.4 **System Reliability Impact Study (SRIS)** - This is a more detailed technical study than the Optional Feasibility Study which assesses the effects of the Generation or Class Year Transmission Project on Thermal, Voltage, Stability and Short Circuit performance as well as transfer limit impact.

- Con Edison performs work in accordance with the executed Study Work Agreement (SWA) between Con Edison and the NYISO. This work typically consists of a review and approval of a developer's one-line diagram, review of Con Edison's system representation in modeling databases, review of contingency definitions, review and update of lowest breaker rating as requested by the NYISO, a Bus Flow Analysis, and a Physical Feasibility Assessment.
- The TP Lead Engineer reviews and comments on Study Scope prior to Con Edison's Execution. The TP Lead Engineer will also coordinate the concurrence to

perform the tasks in the Study Work Agreement before sending the signed Study Work Agreement to the NYISO for execution. Once the Study Work Agreement is executed Con Edison will perform the tasks in the Study Work Agreement upon receiving all necessary information from the NYISO. The TP Lead Engineer will provide all deliverables to the NYISO. When the NYISO releases the Study Report the TP Lead Engineer will review, comment, and send the report to system operations for review and comment before NYISO finalizes the report and sends the study report to Transmission Planning Advisory Subcommittee (TPAS) or the Operating Committee (OC) approval.

4.5 **System Impact Study (SIS)** – Like the SRIS, this is a more detailed technical study to assess the effects of the Transmission or Company Project on Thermal, Voltage, Stability and Short Circuit performance as well as transfer limit impact.

- Con Edison performs work in accordance with the executed Study Work Agreement (SWA) between Con Edison and the NYISO. This work typically consists of a review and approval of a developer's one-line diagram, review of Con Edison's system representation in modeling databases, review of contingency definitions, review and update of lowest breaker rating as requested by the NYISO, a Bus Flow Analysis, and a Physical Feasibility Assessment.
- The TP Lead Engineer reviews and comments on Study Scope prior to Con Edison's Execution. The TP Lead Engineer will also coordinate the concurrence to perform the tasks in the Study Work Agreement before sending the signed Study Work Agreement to the NYISO for execution. Once the Study Work Agreement is executed Con Edison will perform the tasks in the Study Work Agreement upon receiving all necessary information from the NYISO. The TP Lead Engineer will provide all deliverables to the NYISO. When the NYISO releases the Study Report the TP Lead Engineer will review, comment, and send the report to system operations for review and comment before NYISO finalizes the report and sends the study report to Transmission Planning Advisory Subcommittee (TPAS) or the Operating Committee (OC) approval.

4.6 **Class Year Interconnection Facilities Study** – In the Class Year Interconnection Facilities Study, NYISO evaluates all class year projects in two parts. In Part 1, NYISO evaluates individual project to identify Connecting Transmission Owner Attachment Facilities (CTOAF) and System Upgrade Facilities (SUF) that are required to interconnect the proposed project to the Transmission Owner system for energy only. In Part 2, NYISO evaluates for system wide SUFs and projects that are requesting full capacity output. The NYISO may need to identify additional SUFs for capacity if necessary.

Prior to commencing Part 1 study, NYISO will issue the Facility Study Agreement (FSA) to eligible developers. To join a Class Year, the Developer will need to have an approved SRIS by the NYISO Operating Committee and have met certain regulatory milestones. If the Developer has not met regulatory milestones, the Developer can choose to make a study deposit and provide regulatory milestones within the next 12 months. Further details can be found in the NYISO Attachment X.

Once the NYISO has confirmed that the Developer has completed filling out the FSA,

provided the required data, and submitted study deposit, the NYISO will issue to the Developer and Connecting Transmission Owner (CTO) the FSA for execution. Within 10 Calendar Days, the Developer, CTO and NYISO must execute the FSA. Transmission Planning will review the FSA and provide to its Chief Engineer for signature.

Once all the FSA(s) have been executed, NYISO will commence Part 1 Study. NYISO will prepare the necessary studies. As per the Study Work Agreement, the deliverables from Con Edison's Central Engineering Team will be a detailed cost estimate and schedule for the identified SUFs needed to reliably connect the Developer project to the Con Edison system.

In Part 2 Study, the NYISO evaluates the system wide SUFs that are needed to reliably connect the Class Year projects into the New York Power System. In addition, if the Developer elects for full capacity rights for their project, the NYISO will conduct an analysis to identify the System Deliverability Upgrades (SDU). If the NYISO identifies that an Additional SDU is required that has not previously studied, the Additional SDU evaluation commences on a parallel path outside of the Class Year as to not delay the completion of the Class Year. The Class Year Developer that relies on the Additional SDU will have an opportunity to accept cost allocation and post security or reject cost allocation. Depending on the completion of the Addition SDU study and the completion of the current Class Year study, the Developer of the Additional SDU may still be part of the current Class Year base case or will need to be part of the next Class Year base case. Further details can be found in the Attachment X. Upon executing a SWA, Transmission Planning will review of NYISO studies, base cases, contingency definitions, perform bus flow analysis and individual breaker analysis when necessary. Central Engineering will provide a detailed cost estimates and schedule for the Additional SDUs identified by NYISO.

Prior to issuing the deliverables to NYISO, the detailed cost estimates and schedule will need to be reviewed and concurred by the Vice Presidents of S&TO, Engineering and Substation. Once concurrences have been attained, Transmission Planning will submit the deliverables to NYISO.

4.7 **For Attachment P, Facilities Study** – For transmission projects seeking to interconnect under Attachment P process, the NYISO determines the required Network Upgrade Facilities (NUF) and provides cost and schedule estimates to the Developer of the Transmission Project. After executing a SWA with the NYISO, Central Engineering will work with the Developer on detailed Engineering and Design to come up with a cost estimate and schedule for the interconnection of the project to the CTO system. If needed, Transmission Planning will coordinate meetings with Developer, NYISO and various departments in Con Edison. Under Attachment P process, there is no Class Year study.

4.8 **Interconnection Agreement (IA): Large Generator Interconnection Agreement (LGIA) or Transmission Project Interconnection Agreement (TPIA)** - After completion of the Interconnection Facilities Study and the NYISO's Open Access Transmission Tariff Attachment S cost allocation process, the Developer will be provided with a Standard Large Generator Interconnection Agreement or Transmission Project Interconnection Agreement

by the NYISO, as appropriate. Notwithstanding this, at the request of the Developer the NYISO and Con Edison shall begin negotiations with the Developer concerning the IA (LGIA or TPIA) and its appendices at any time after the Developer executes the Class Year Interconnection Facilities Study Agreement or Facilities Study 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. Project Development and Delivery 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.

4.9 **Construction** - Once the Interconnection Agreement has been executed, the Construction phase can begin, subject to any scheduling constraints. A Project Manager will be assigned to work with the Developer on the different aspects of construction activities. 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. The Project Manager (PM) is responsible for overseeing the construction activities. The PM is also responsible for coordination between various department in Con Edison. Finally, at the project closing, the PM is responsible for any punch list items and lessons learned.

5.0 Information Sharing

On a monthly basis, the Transmission Planning Department hosts a meeting to discuss the status of proposed and ongoing interconnection projects for non-merchant CECONY departments who have completed FERC Standard of Conduct training. Representation includes: Transmission Planning, Central Engineering, Law, Substation Operations, Energy Market Policy Group, System Operations, 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.

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.

6.0 Major Departmental Roles

6.1 **Transmission Planning (TP) –** The Transmission Planning (TP) department is Con Edison's representative during initial interactions between Developers and the NYISO. The Transmission Planning Department receives from the NYISO, notification of interconnection requests and applications and manages the process through the various study stages of the NYISO interconnection procedures. Transmission Planning coordinates the necessary contracts and agreements required to allow the safe interconnection of a 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.

For each Interconnection Project, the manager of the Interconnection Services Section will assign a TP Lead Engineer. The TP Lead Engineer 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 TP Lead Engineer is responsible for communicating to other departments the invoice due dates.

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

6.2 **Central Engineering (CE)** – The Central Engineering 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.

6.3 **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.

6.4 **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.

6.5 **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.

7.0 Balancing Authority Area's Metered Boundaries

7.1 **New or Materially Modified Transmission Facility:**

The New York Control Area (NYCA), as defined in the NYISO OATT Section 1.14, constitutes the Balancing Authority Area for which the NYISO is the Balancing Authority. A new transmission facility or materially modified transmission facility is or will be located within the metered boundaries of the NYCA if:

- It is included on the publicly posted NYISO Interconnection Queue as a result of:

  - A System Impact Study Request submitted to and validated by the NYISO pursuant to NYISO OATT Section 3.7 (*e.g.*, a transmission upgrade and/or expansion identified in a Local Transmission Owner Plan or NYPA transmission plan);
  - A Transmission Interconnection Application submitted to and validated by the NYISO pursuant to NYSIO OATT Attachment P, Section 22.4.2 (*e.g.,* a new transmission facility or transmission upgrade and/or expansion that is subject to the ISO's competitive selection process in the ISO's Comprehensive System

Planning Process in Attachment Y of the ISO OATT); or

- An Interconnection Request for a Class Year Transmission Project submitted to and validated by the NYISO pursuant to NYISO OATT Attachment X, Section 30.3.3 (i.e., a new transmission facility or transmission upgrade for which the developer is eligible to request and does request Capacity Resource Interconnection Service); or

- It will otherwise constitute or materially modify a Transmission Facility Under ISO Operational Control, a Transmission Facility Requiring ISO Notification, or a Local Area Transmission System Facility as defined by the Agreement Between NYISO and Transmission Owners.

7.2 **New or Materially Modified Generation Facility:**

The New York Control Area (NYCA), as defined in the NYISO OATT Section 1.14, constitutes the Balancing Authority Area for which the NYISO is the Balancing Authority. A new or materially modified generation facility is or will be located within the metered boundaries of the NYCA if:

- It is included on the NYISO's publicly posted Interconnection Queue as a result of:

  - An Interconnection Request submitted to and validated by the NYISO pursuant to NYISO OATT Attachment X, Section 30.3.3 (Large Generating Facility over 20 MW interconnecting to the New York State Transmission System or Distribution System) Facility Interconnection Project; or

    - An Interconnection Requests submitted to and validated by the NYISO pursuant to NYISO OATT Attachment Z, Section 32.1.3 (Small Generating Facility 20 MW or less interconnecting to the New York State Transmission System or Distribution System); or

- It will otherwise interconnect to a Transmission Facility Under ISO Operational Control, a Transmission Facility Requiring ISO Notification, or a Local Area Transmission System Facility as defined by the Agreement Between NYISO and Transmission Owners.

8.0 Engineering and Design of Interconnection Facilities by CECONY

8.1 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.

8.2 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:

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

8.3 The Central Engineering Lead 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”.

8.4 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.

8.5 The Central Engineering Lead addresses environmental test findings and results from site investigation and testing, completes the Scoping Document for submittal, and performs the following:

- Ensure affected drawings are updated.
- 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.
- Ensures Project estimates are developed when Corporately accepted.
- If the Project contains a capital project, ensure appropriation documents are prepared and submitted for approval.

8.6 The Central Engineering Lead 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

- Identifies potential community concerns.
- Ensures potential environmental concerns are being addressed.
- Determines Project outage requirements.
- Ensures potential constructability concerns are identified and addressed.

8.7 The Central Engineering Lead 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:

- 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.
- Ensures all permits required to support the project are identified and permit applications are prepared.

8.8 The Central Engineering Lead 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:

- Civil/Structural.
- Electrical.
- Environmental.
- Instrument and Control.
- Mechanical.
- Transmission.

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

8.10 The Central Engineering Lead and discipline engineers determine what equipment is major and what additional equipment and materials are long lead procurement items, and perform the following:

- Develop equipment specifications in accordance with Engineering Operations Manual, CE-0501, “Engineering Specifications”.
- Ensure training requirements are identified.
- Prepare major equipment purchase request letters and submit to Purchasing.
- Prepare materials lists for long lead time materials in accordance with Engineering Operations manual, CE-0401,”Engineering Drawings, Material Lists, and Calculations.

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

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

8.13 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”.

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

- Work orders for identified work groups are established.
- Detailed project schedule is approved, issued, and maintained current.
- Current Working Estimate (CWE) for the project is initiated and maintained throughout the Project.
- Project appropriation is approved, if required.
- That the appropriate company organizations are notified as to the cost responsibility for items such as:

    - Ongoing O&M Costs.
    - Incremental real estate tax obligations.
    - Equipment title transfers.

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

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

8.17 The Central Engineering Lead coordinates technical evaluation of purchased equipment proposals with discipline engineers.

8.18 Purchasing performs the following functions:

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

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

8.20 The Central Engineering Lead coordinates the preparation of outage step drawings and outage step instructions for outage and non-outage work and obtains concurrence from the following:

- Construction, or the Constructor Organization
- User Organization
- Test Group
- System Operations.

8.21 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.

8.22 The Central Engineering Lead ensures the Construction Package and the appropriate Construction Specification is prepared for review, comment and is available in Project Explorer.

8.23 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.

8.24 The Central Engineering Lead 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:

- Relay settings
- Equipment test letters
- Functional testing requirements
- Operating diagrams
- Operating instructions
- Station/System descriptions.

8.25 The Central Engineering Lead ensures all permits required to support the project are obtained including environmental and building permits.

8.26 The Central Engineering Lead ensures the Construction Packages are issued to the Construction Manager.

9.0 Engineering and Design by Developer/NYISO

9.1 The Large Facilities Interconnection Procedure (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.

10.0 Construction and Startup Testing

10.1 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.”

10.2 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.

10.3 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.

10.4 Purchasing performs the following tasks:

- 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.
- Conducts pre-bid meetings and field visits.
- If required, coordinates with the Project Manager/Central Engineering Lead to obtain clarifications to issues raised by bidders.
- Provide clarifications to bidders as required.
- If required, coordinates with the Central Engineering Lead to perform technical evaluation of construction bid proposals in accordance with Engineering Operations manual, CE- 0302, “Engineering Evaluations, Reviews, and Inspections.
- Conducts findings-of-fact meetings with Bid Check Estimating when discrepancies arise in bid submittals, and performs commercial evaluations.
- Identifies apparent successful bidder with input from the Project Manager.
- 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.
- Issue a purchase order to the successful bidder.

10.5 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:

- Prepare and submit a site and job specific Environmental, Health and Safety Plan (eHASP)
- Prepare and submit a Schedule and Work Plan for the activities specified in the project documentation such as the IA or TF.

10.6 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.

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

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

10.9 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:

- Ensures environmental, health, and safety excellence is the primary goal in the planning, organizing, directing, performing, and controlling field activities.
    - Goals relating to field activities shall emphasize safety, environmental concerns, and high level of performance and productivity.
- Controls the acceptance for delivery of vendor equipment and ensures all tests, including field trial tests, are completed
- Ensures the following
    - - 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
    - - Constructor completes all component and system integrity tests in accordance with specifications, codes and engineering standards
    - Constructor completes outage work and system and equipment tie-ins in accordance with applicable drawings and instructions.
    - - User organization completes functional testing and commissioning of equipment
    - Constructor submits "as-built"

10.10 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.

11.0 Project Closeout

11.1 The Central Engineering Lead ensures issuance of the Project Information Package (PIP) which includes:

- System/Engineering descriptions or updates.
- Functional Testing requirements.

- Preventative Maintenance requirements.
- As listed in CE-0301 Paragraph 5.7.1

11.2 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.

11.3 The Project Manager ensures the Construction Manager, Central Engineering Lead , applicable test groups, discipline engineers, and User prepare punch lists, and performs the following:

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

11.4 The Project Manager coordinates closeout inspections with the Project Central Engineering Lead, 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.

11.5 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.

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

11.7 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.

11.8 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.

12.0 References

1. CE-0301, “Engineering and Construction Projects”

2. CE-0302, “Engineering Evaluations, Reviews, and Inspections”

3. CE-0401, “Engineering Drawings, Material Lists, and Calculations”

4. CE-0501, “Engineering Specifications”

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

6. CI-280-4, “Administration of Construction, Service and Public Improvement/Interference Contracts”

7. CI-290-3, “Obtaining ‘As Constructed’ Drawings”

8. CI-291-2, “Project Management Process”

9. CI-610-1, “Capital Budget Process”

10. CI-610-3, “Project Closeout Procedure”

11. NYISO Open Access Transmission Tariff (OATT): Section 3.7, Attachment P, Attachment S, Attachment X, Attachment Y, and Attachment Z

12. Con Edison Developer Welcome Kit

13. TP-7100 Transmission Planning Criteria

14. TP-8100 Performance Requirements for Inverter Based Generation