Material Modifications

IPWG Meeting 4.23.18

Common changes made to IX applications and facilities

Applications under review

- Equipment availability - Exact hardware specified in application isn't available during construction
- Permitting/zoning requirements – Necessitating a change in PCC or decrease in system size to accommodate larger setbacks
- System Size up or down
- Change of project ownership

Existing facilities

- Need to replace aging infrastructure
- Updating facilities to include newer monitoring/control/firmware devices
- Updating facilities to include storage or other additions

<u>Clarity on process can save both developer and utility time and money.</u>

Important Considerations

Timelines

- How will modifications impact projects later in the queue?

Costs

- Some utility interconnection costs are developed based on historic estimates that do not account for multiple review states and modifications.
- Will modifications impact costs on later applications?

Queue position

- Ensuring that projects can retain queue position and therefore access to certain certain market options if a modification is not deemed material

Definition: Federal SGIP, California

FERC SGIP:

Material Modification: A modification that has a material impact on the cost or timing of any Interconnection Request with a later queue priority date.

California:

Material Modification: Those modifications that have a material impact on cost or timing of any Interconnection Request with a later queue priority date or a change in Point of Interconnection.

Definition: Massachusetts

National Grid decides, as defined by Company-specific technical standards, whether a proposed change is “significant” or “moderate.” Significant means the applicant starts all over from beginning. Moderate means the applicant does not have to reapply, and the Company will “endeavor to complete the Study earlier than that allotted time.”

Definition: North Carolina

"Material Modification" means a modification to machine data or equipment configuration or to the interconnection site of the Generating Facility that has a material impact on the cost, timing or design of any Interconnection Facilities or Upgrades.

Material Modifications include project revisions proposed at any time after receiving notification by the Utility of a complete Interconnection Request pursuant to Section 1.4.3 that 1) alters the size or output characteristics of the Generating Facility from its Utility-approved Interconnection Request submission; or 2) may adversely impact other Interdependent Interconnection Requests with higher Queue Numbers.

Material Modifications in North Carolina

- A change in Point of Interconnection (POI) to a new location, unless the change in a POI is on the same circuit less than two (2) poles away from the original location, and the new POI is within the same protection zone as the original location;
- A change or replacement of generating equipment such as generator(s), inverter(s), transformers, relaying, controls, etc. that is not a like-kind substitution in size, ratings, impedances, efficiencies or capabilities of the equipment specified in the original or preceding Interconnection Request;
- A change from certified to non-certified devices
- A change of transformer connection(s) or grounding from that originally proposed;
- A change to certified inverters with different specifications or different inverter control specifications or set-up than originally proposed;
- An increase of the AC output of a Generating Facility; or
- A change reducing the AC output of the generating facility by more than 10%.

Examples of changes that are not material modifications

North Carolina and California

- Change in ownership of the generating facility

North Carolina

- A change or replacement of generating equipment that is same for same
- An increase in the DC/AC ratio that does not increase the maximum AC output capability of the generating facility
- A decrease in the DC/AC ratio that does not reduce the AC output capability of the generating facility by more than 10%.

Examples of changes that are not material modifications

Ohio

"Minor modification" to an interconnection application means a change in the technical characteristics that improves the reliability, safety and compatibility of the interconnection with the electric distribution system while not materially increasing the size or cost of the intended distributed generation facility installation.

California Working Group 1

Proposed modifications to Fast Track interconnection applications

- Like-for-like equipment replacements that: (a) do not increase facility size, (b) do not decrease size by more than 20%, and (c) does not have mitigations or upgrades identified.
- Size reductions that do not decrease size by more than 20% and the customer pays for any upgrades or mitigations.
- Size reductions to avoid upgrades if: (a) the reduction does not decrease size by more than 20%, (b) the customer pays a $300 fee for the utility to conduct a re-study to verify no other facilities are affected, and (c) no other facilities are effected.

California Working Group 1

Modifications to existing facilities with permission to operate (non-consensus on process)

- Exact same equipment replacements (same make and model) and inverter firmware. *(Non-consensus on process)*
- Like for like replacements with no increase in system output. (*Non-consensus on process)*
- Like for like replacements with an increase in system output. (*Non-consensus on process)*
- Adding storage without replacing the inverter. (*Non-consensus on process)*
- Adding storage to an existing system. *(Consensus on requiring normal interconnection application)*
- System capacity increases without other controls. *(Consensus on requiring normal interconnection application)*
- Changing inverter operating characteristics, such as export limits, operating mode, and some smart inverter settings.*(Consensus on requiring normal interconnection application)*

Minnesota Staff Recommendation to PUC

Modification of the Distributed Energy Resource:

The Interconnection Customer must receive written authorization from the Area EPS Operator before making any change to the Distributed Energy Resource that may have a material impact on the safety or reliability of the Distribution System. Such authorization shall not be unreasonably withheld if the modification is not a Material Modification. Material Modifications, including an increase nameplate rating or capacity, may require the Interconnection Customer to submit a new Interconnection Application as described in MN DIP Section 1.6.2. If the Interconnection Customer makes such modification without the Area EPS Operator's prior written authorization, the latter shall have the right to temporarily disconnect the Distributed Energy Resource.

Considerations for IPWG

- Option for advance determination, if utility discretion is required
- Examples of what is and is not considered material
- Concrete thresholds for time and cost impact on any re-review needed
- Next generation cost sharing mechanism's potential impact, if any

Next Steps for IPWG?

Subcommittee determines range of typical material and minor modifications relevant to NY projects

Then determines options for IX process (i.e. notification only to utilities, fee to review/re-study, project reapplication into the queue)

Assigns range of material modification options to IX process

IPWG discussion, review and modifications

Resources and Links

California

- Rule 21 Info: http://www.cpuc.ca.gov/Rule21/
- Rulemaking 17-07-007, CPUC Working Group #1 Report: http://www.cpuc.ca.gov/General.aspx?id=6442455170

North Carolina

- Interconnection Order (Docket E-100 Sub 101): http://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=bc4171f9-38ac-48ad-ba34-b02996856f60

Minnesota

- PUC Docket 16−521