Forward Capacity Market (FCM) New Supply Resource Qualification Process Overview

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ISO new england

Qualification Process Overview

- Two major information submittals are required for qualification of New Capacity Resources
- Show of Interest (SOI) Form
  - Contains sufficient information to perform preliminary analysis of the effect of the proposal on the New England system
  - Will include attachments as necessary
- New Capacity Qualification Package
  - Contains sufficient information to assess the viability of the project
  - Will include attachments as necessary

Market Rule 1 - Section III.13.1.1.2

Key Steps in the Qualification Process New Resources

- Project Sponsor submits SOI Form
  - Applicable to new generation projects, new intermittent resources, new demand resources and new imports
  - A SOI Application is still required if an Interconnection Request (IR), as defined in Schedules 22 and 23 of the ISO Tariff (LGIP/SGIP - Large/Small Generator Interconnection Procedures), has already been submitted
  - An IR is not required to submit an SOI
  - For new generation projects, verification of Site Control must be included in the SOI Application
  - The Project Sponsor is not required to be a Market Participant at the time of submittal of the SOI application

Market Rule 1 - Section III.13.1.1.2.1

Key Steps in the Qualification Process New Resources, cont.

- Project Sponsor submits Qualification Process Cost Reimbursement Deposit (within 10 business days of Invoice)
  - For all completed SOI forms, the ISO will send invoice for payment of the Qualification Process Cost Reimbursement Deposit
  - The invoices will be due within 10 business days of the date of the invoice
- ISO Performs Initial Interconnection Analysis
  - Perform Initial Interconnection Analyses to analyze the effect of the proposal on the New England system

Key Steps in the Qualification Process New Resources, cont.

- Project Sponsor submits Qualification Packages
- ISO Reviews Qualification Package
  - Critical Path Schedule to verify that the resource will be declared available for commercial operation no later than the first day of the Commitment Period
  - Other information if applicable
- ISO sends Qualification Determination Letter to the Project Sponsor
  - Will indicate whether participation in the Forward Capacity Auction (FCA) is accepted or denied
  - Based on information in above steps

Key Steps in the Qualification Process New Resources, cont.

- Project Sponsor Submits Financial Assurance
  - Due within 10 business days of release of the Qualification Determination Letter described in previous step
  - $2/kW for each Qualified kW
  - Deposit shall be provided in a form acceptable under the terms of the Financial Assurance Policy
  - Project Sponsors that wish to withdraw and not submit Financial Assurance must do so 3 Business Days before the deadline to submit Financial Assurance

Summary of Qualification Reviews

- The Following Qualification Reviews are conducted for New Generating Capacity Resource Projects
  - Direct Connect Review
  - Minimum Interconnection Standard Review
    - Thermal Review
    - Short Circuit Review
  - Overlapping Interconnection Impact Review
  - Critical Path Schedule Review
  - Intermittent Resource (Wind) Effective Capacity Review
- Review of New Capacity Import Resources includes
  - Documentation of Import
  - Control Area information if applicable

SOI Form Contents

- Project Sponsor's contact information
- Project Sponsor's Market Participant status if any
- Status of the project under the Large/Small Generator Interconnection Procedures,
- Project Name and Type
- Capacity (Max & EcoMin in MW) of the proposed New Capacity
- Project's expected commercial operation date and desired FCM Commitment Period
- Project address or location, and if relevant, Asset ID number
- General description of the project's equipment type and configuration (Identify if Re-powering, Environmental etc.)
- Simple location plan and simple line diagram of the plant and facilities
- Other specific project data as set forth in the blank New Capacity SOI Form

Site Control

- Site Control must be submitted with the SOI Form
- Site Control requirements are the same as those used in the Large/Small Generation Interconnection Procedures (ISO-NE Tariff Schedule 22 & 23)
- Site Control is not required for resources that have previously been counted as capacity (i.e. Repowering projects, Environmental compliance projects, Incremental upgrade projects)

Market Rule 1 - Section III.13.1.1.2.1

Qualification Process Cost Reimbursement Deposit

- Mechanism to recover costs of FCM qualification tasks
- Actual costs of ISO review (under-collection invoiced, over-collection refunded) reconciled upon later of first day of Commitment period or date of commercial operation
- Less analyses may be performed (and the deposit will be reduced) if applicant has already completed all/most of their LGIP/SGIP studies
- Reimbursements credited to ISO's revenue requirement under Tariff Section IV.A

Market Rule 1 - Section III.13.1.9.3

Qualification Process for Cost Reimbursement Deposit

New Generating Resources and New Distributed Generation ≥ 20 MW	New Generating Resources and New Distributed Generation < 20 MW and ≥ 2 MW	Imports	All Demand Resources ≥ 2 MW Other Than Distributed Generation	New Generating Resources and New Demand Resources (including Distributed Generation) < 2 MW
Including Up-rates, Re-powering, Environmental Compliance & Intermittent Power Resources	*Including Up-rates, Re-powering, Environmental Compliance & Intermittent Power Resources*	*Resources outside the New England Control Area*		
$25,000	$7,500	$1,000	$3000	$500
With Executed Feasibility Study Agreement or System Impact Study Agreement	*With Executed Feasibility Study Agreement or System Impact Study Agreement*		*New Demand Resources that expand upon an Existing Demand Resource with no material changes to the resource*	
$15,000	$6500	n/a	$500	n/a

Rules for Modifying SOI Forms

- After submission of a New Capacity SOI Form, material changes (as defined in Section 4.4 of Schedule 22 of Section II of the Transmission, Markets and Services Tariff) may not be made to the information contained therein
- No change that may result in a reduction in capacity may be made to a project described in a New Capacity SOI form or New Capacity Qualification Package after 30 days before the Qualification Determination Notification Date

Market Rule 1 - Section III.13.1.1.2.1

Rules for Modifying SOI Forms, cont.

- Material Modification (not permitted)
  - Increase in Output
- Potentially Material Modifications
  - The following modifications may be material – The Project Sponsor may request that the ISO evaluate whether such modification is a Material Modification
    - A change in the generating equipment configuration
    - A change in the interconnection configuration
    - A change in Importing Interface (Imports)
    - A change in equipment technical parameters

New Capacity Qualification Package

- New Capacity Qualification Package contains several elements
  - Offer Information (Offers below 0.75 * CONE*)
  - Offer Information (Rationing and 1-5 year Commitment Period election)
  - CPS (Critical Path Schedule)
  - Modifications to Existing Resources
  - Intermittent Information
  - Import Information
- Many Project Sponsors have to complete more than one of the above elements

Market Rule 1 - Section III.13.1.1.2.2

* CONE = the Cost of New Entry and is set at $7.50 for the first Forward Capacity Auction

ISO Review of the New Capacity Qualification Package

- In making its determinations, the ISO may consider, but is not limited to considering, the following
  - Whether the New Capacity Qualification Package contains all of the elements required and is sufficiently developed
  - Whether the milestones in the Critical Path Schedule are reasonable and likely to be met
  - Whether, in the case of a resource previously listed as a capacity resource, the requirements for treatment as a New Generating Capacity Resource are satisfied
  - Whether, in the case of an Intermittent Power Resource, sufficient data is provided, and whether the data provided reasonably supports the claimed summer and winter Qualified Capacity

Market Rule 1 - Section III.13.1.1.2.4

New Intermittent Resources Qualification

- A New Intermittent Resource may specify its Qualified Capacity Value during qualification, up to its name-plate capacity, provided
  - It must demonstrate it has measured and recorded applicable site specific data (e.g. wind/hydro site data)
  - The data, in conjunction with the Intermittent Resource's physical design characteristics, must support its claimed Qualified Capacity Value
  - The claimed Value will be adjusted based on a projection of its expected annual availability factor
  - A New Intermittent Resource must satisfy the same milestone requirements as any other new capacity resource

Market Rule 1 - Section III.13.1.1.2.2.6

What is the Consultation Process?

- The ISO will share its Initial Interconnection Analysis findings with affected Transmission Owners (TO), offering the TO(s) an opportunity to comment on the findings
- If ISO-NE determines that there are any negative findings, either in Initial Interconnection Analysis or in Critical Path Schedule review, then
  - ISO-NE will provide written documentation of its determination to the Project Sponsor a number of weeks before the end of the qualification review period
  - The Project Sponsor will have an opportunity to respond to ISO-NE's determination and attempt to cure the evaluation failure.

Qualification Determination

- Positive Determinations will contain
  - Summer & Winter Qualified MWs
  - Financial Assurance Requirements
  - Determination of Market Monitoring for Offers below 0.75 * CONE, if appropriate
  - A description of how the Resource must address Overlapping Interconnection Impacts
  - Preliminary, non-binding list of transmission upgrades, if applicable
- Negative Qualification Determinations will contain
  - Description(s) of why the Resource was not accepted

Market Rule 1 - Section III.13.1.1.2.8

Withdraw or Submit Financial Assurance

- Projects Sponsors that receive Positive Qualification Determinations must withdraw (irrevocable) in writing no later that 3 Business Days before the deadline to submit Financial Assurance
- Resources that do not withdraw must submit Financial Assurance ($2/kW) for their full Qualified MW amount
- After posting the Financial Assurance, the resource must offer its full summer Qualified Capacity at the FCA Starting Price in the first round of the auction
- Resources are not obligated for the commitment Period until they clear in the FCA

Market Rule 1 - Section III.13.1.1.2

Financial Assurance – Post Auction

- New Resources that do not clear in the FCA will have their $2/kW Financial Assurance deposit returned
- Within 5 business days Resources that clear in the FCA must submit additional Financial Assurance for a total of $7.50/kW for each obligated kW
- Two additional Financial Assurance deposits of $7.50/kW for each obligated kW are required before the start of the Capacity Commitment period

Critical Path Schedule Monitoring

- For Projects that do clear in the auction, monitoring of the Critical Path Schedule will continue until the Commitment Period
- For Projects that do not clear in the auction, the Project Sponsor may elect to continue the Qualification Process for future reconfiguration auctions associated with the primary auction in which qualification was initially requested
  - Election to be made within 45 days of the completion of the relevant Forward Capacity Auction

Market Rule 1 - Section III.13.3.1

Critical Path Schedule Monitoring, cont.

- Project Sponsors must communicate Project Progress
  - Submit proof of milestone attainment and updated CPS – as each milestone is attained
  - Submit quarterly CPS updates – irrespective of whether any new milestones have been attained or not
- Demonstration of Completion of Milestones
  - Submit supporting documentation to ISO-NE
  - Example – Provide copy of (or cover letter for) permit(s) from Permitting Agency to demonstrate completion of “Major Permits Obtained” milestone

Market Rule 1 - Section III.13.3.2

Critical Path Schedule Monitoring, cont.

- If as a result of milestone date revisions, the Commercial Operation milestone date is after the start of any Capacity Commitment Period in which the resource has a Capacity Supply Obligation, then the project will either
  - Lose its awarded capacity and associated Financial Assurance, or
  - Must enter into an arrangement to cover its obligation
    - If the New Capacity is not commercial as of the Commitment Period, it shall have the right to cover the default for a period of up to two years - by means of a bi-lateral contract or a Reconfiguration Auction

Market Rule 1 - Section III.13.3.4

Timing of Interconnection Upgrades

- If a generator has been built but is not able to become commercial due to a planned transmission facility not being in service (e.g., radial interconnection)
  - Generator will not be paid
  - Generator will be exempt from the requirement to cure in order to avoid default
- If a generator has become commercial but is not able to reliably run at full output due to transmission not being complete
  - Generator will be paid
  - Generator will be exempt from Availability Penalty

Market Rule 1 - Section III.13.7.1.1.3

FCM Qualification Interconnection Analysis

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Background of the LGIP/SGIP Minimum Interconnection Standard

- Planning Procedure 5-6 – “Scope of Study for System Impact Studies under the Minimum Interconnection Standard (MIS)” (Adopted - April 1999)
- Under the MIS
  - “As a result of the addition of the proposed new Resource, the maximum collective change in the amount by which other Resources must be **re-dispatched** to meet the Reliability Standards, does not exceed the capacity of the new Resource, as measured by its intended high limit”

Forward Capacity Market Agreements

- The FCM Settlement Agreement was approved by FERC in June 2006
- New Generating Resources should be qualified before proceeding to participate in a Forward Capacity Auction
  - A completed System Impact Study is not required to qualify
  - An “Initial Interconnection Analysis” would be required
  - A review of “Overlapping Interconnection Impacts” would be required

Initial Interconnection Analysis

- ISO shall perform an initial interconnection analysis and shall determine the amount of capacity that the resource could provide
- Include, but not limited to, a power flow analysis and a short circuit analysis
- If the ISO determines that the interconnection facilities and upgrades identified can not be implemented before the start of the Capacity Commitment Period, the New Generating Capacity Resource's summer Qualified Capacity may be adjusted or the Resource may not qualify

Market Rule 1 - Section III.13.1.1.2.3

ISO-NE Planning Procedure 10

- Approved by the NEPOOL Participants Committee in September 2007
- Contains Procedures for the following
  - Process for establishing the Commitment Period Base Case
  - Process for certifying Transmission Upgrades
  - Standard for Direct Connect Review
  - Standard for Initial Interconnection Analysis
  - Standard for Overlapping Impact Analysis
  - Guideline for determining if upgrades can be completed in time for the Commitment Period (Appendix F)

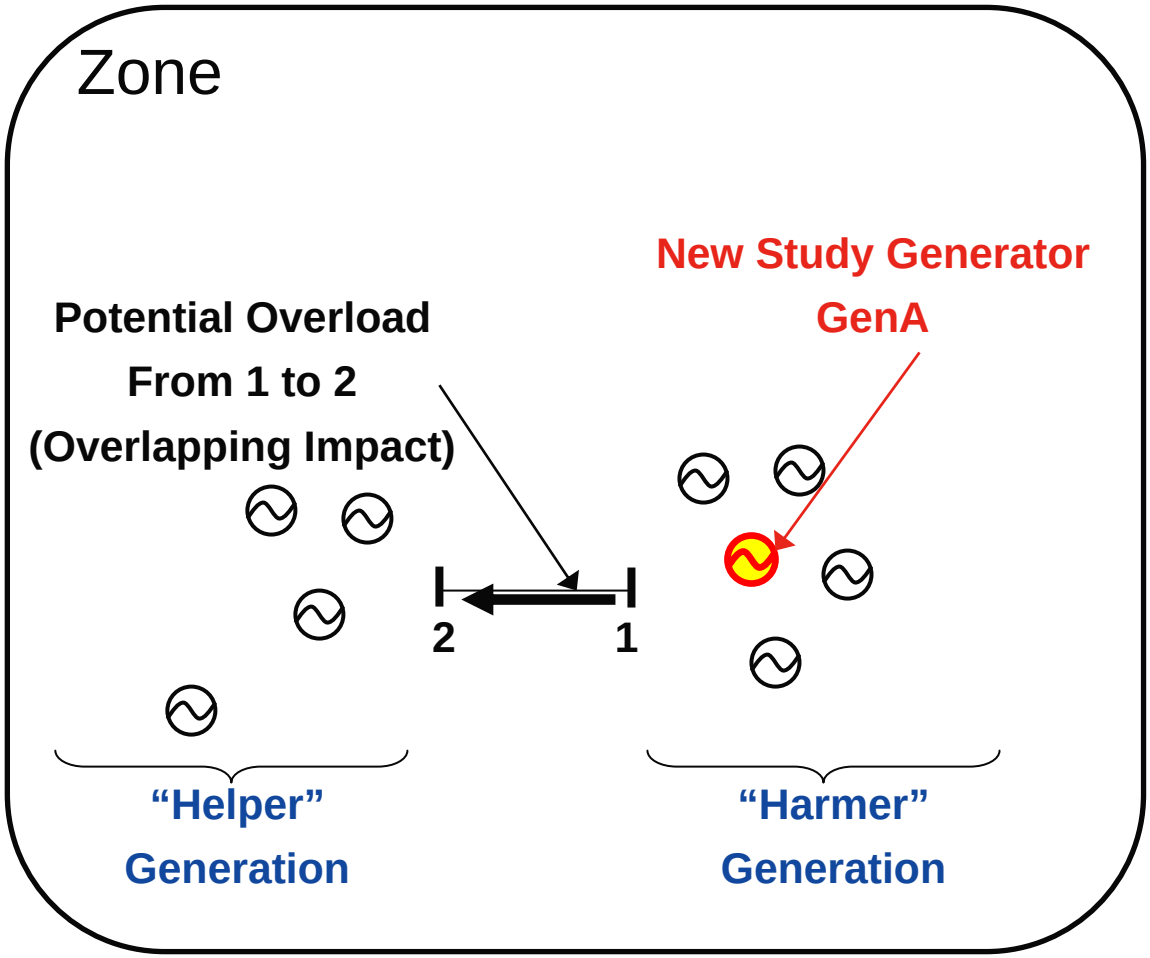
Direct Connect Review

- Ability to connect the resource to the point of common coupling (Interconnection Point)
- Focus is on cases of longer distances
  - Uncertainty of actual Interconnection Point
  - Right-of-way issues
  - Land Ownership Issues
  - Terrain/Obstacles
  - Permittability

Interconnection Analysis

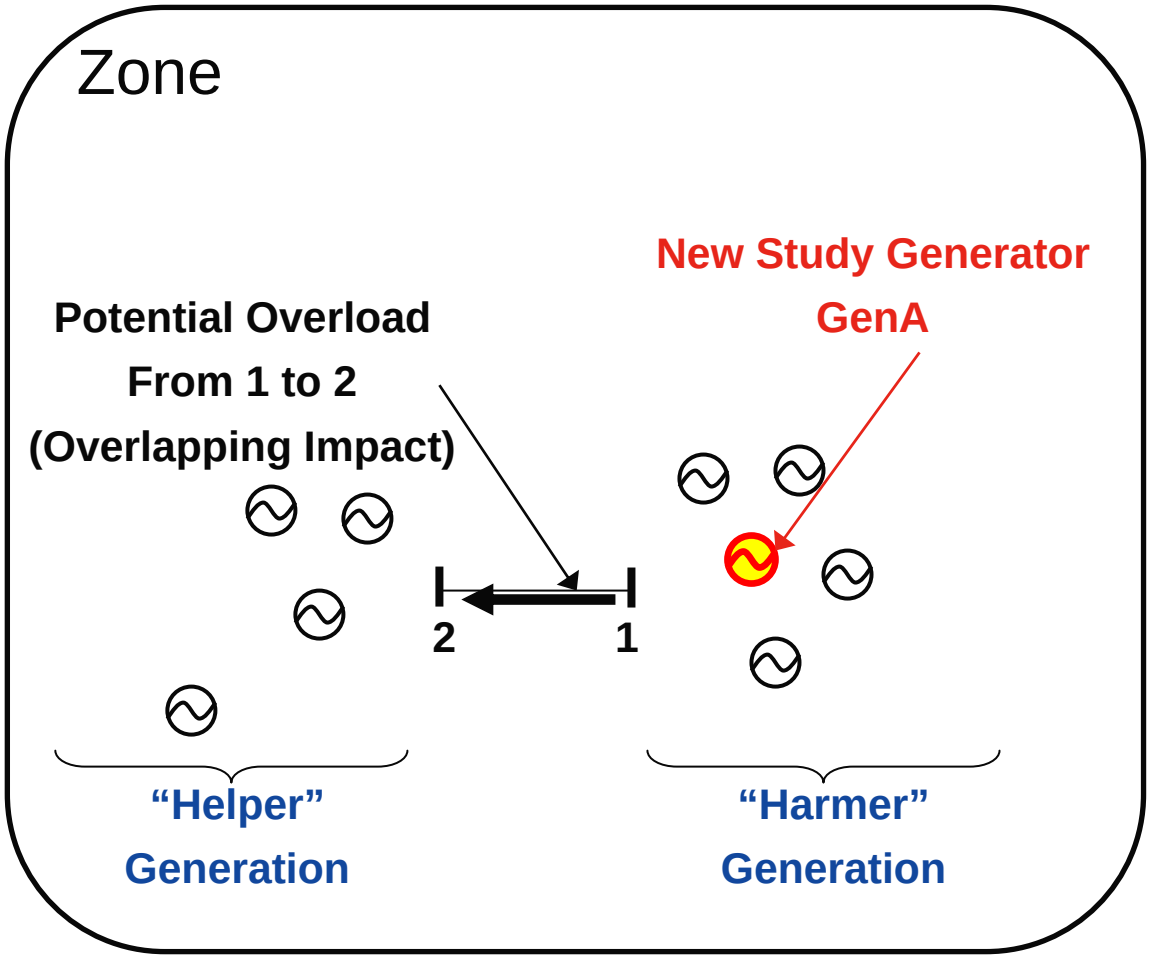
- Assess the ability to interconnect by the start of the Capacity Commitment Period subject to a Minimum Interconnection Standard
  - Thermal Power Flow Analysis
  - Short Circuit Analysis
- Uses Large Generator Interconnection Procedure result whenever available
- For the FCM, if qualification is restricted due to Initial Interconnection Analysis, the threshold is
  - Where the upgrade(s) cannot be completed in time for the Commitment period
  - Where upgrades can be completed in time, the generator will be qualified

Review Minimum Interconnection Standard



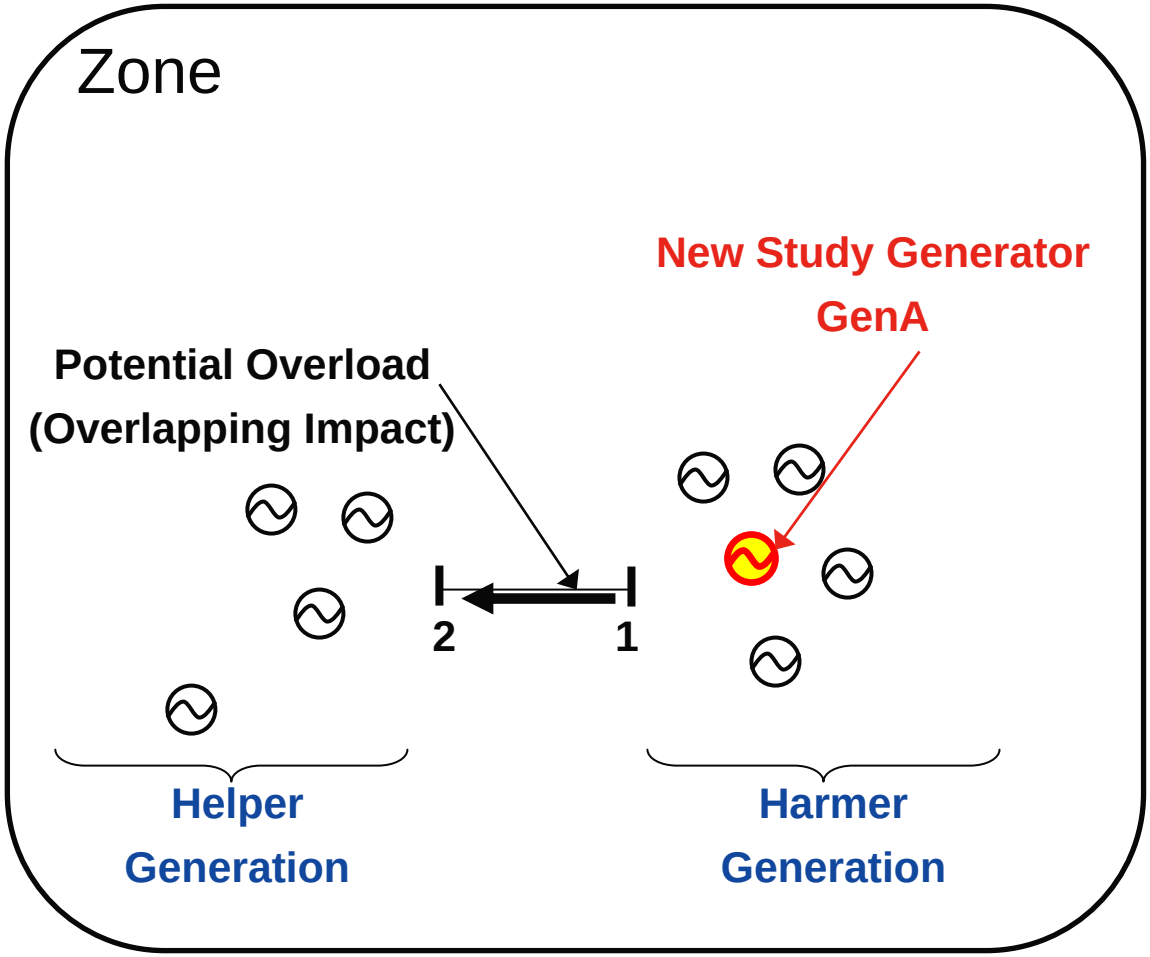
- The transmission line between Substation 1 & Substation 2 (1-2) becomes overloaded when GenA is added
- Generators that add to the loading of 1-2 are called Harmer Generators
- Generators that reduce the loading of 1-2 are called Helper Generators

Review Minimum Interconnection Standard, cont.



- Under the MIS, other Harmer Generation can be re-dispatched down to relieve overload 1-2
- Combined new generator & re-dispatch must not degrade transfer or import capability
- However, under this test, the new generator may not be incrementally useful capacity

Overlapping Impact Standard



- Under the Overlapping Impact Standard, the re-dispatch of Harmer Generation to relieve the constraint so that the New Generator is incrementally useful should not be allowed

Overlapping Impacts within FCM

- New Qualified Capacity must be incrementally useful – must provide an additional capacity benefit
- New Generation is analyzed for Overlapping Interconnection Impacts during qualification
- For the FCM, if qualification is restricted due to overlapping impacts, the threshold is
  - Where the upgrade(s) cannot be completed in time for the Commitment period
  - Where upgrades can be completed in time, the generator will be qualified
  - If applicable the resource may be partially qualified to participate in the FCA up to the amount that the resource can operate without fixing the observed violations

Overlapping Impacts
Distribution Factor Re-dispatch Restriction

- Distribution Factors (DFAX) are a measure of the responsiveness of electrical loadings on elements such as transmission lines or transformers due to a change in output from a given generator
- Generators with a positive DFAX are referred to as “Harmer” generation because increasing the output of these generators results in more flow on the limiting element for a given contingency
- The re-dispatch of “Harmer” generation will be limited under the Overlapping Impact test
- Harmer Generation with DFAX > 3% on a constrained element may not be re-dispatched to relieve the constraint
- Existing generation that has not permanently de-listed in a previous Forward Capacity Auction will be modeled at up-to its Summer Qualified Capacity

Overlapping Impacts
Transfer Level Stress and Interface Impacts

- Transfer levels from external control areas should be set at up-to the import limit for the Overlapping Impact test
- Internal Transfer levels shall be set at up-to the transfer limit for the Overlapping Impact test
- Internal Interfaces
  - Generation under study to be incrementally useful within the Load Zone (up to the maximum export level of that Zone)
  - Generation under study will not be required to upgrade interface transfer capability between Load Zones

Overlapping Impacts - Load Level

- The Installed Capacity Requirement is calculated using a range of load levels
- The 90/10 load is used in LGIP/SGIP analysis
- FCM Initial Interconnection Analysis is at 90/10
- Using the 90/10 load is more in line with a “Peak-Load” capacity product and provides results more directly comparable to the results in LGIP/SGIP analysis
- The Overlapping Impact Test will be performed at 90/10 load

Overlapping Impacts - Other Design Notes

- No Operating Procedure 4 (OP-4) actions will be modeled
- All single element contingencies and multiple element contingencies as described in Planning Procedure 3 (PP-3) and in Operating Procedure 19 (OP-19) will be considered

Overlapping Impacts within FCM, cont.

- Where multiple New Generating Resources cannot be selected because they overlap with each other
  - Interconnection Queue order is used to choose between the overlapping generators
  - For example, if the generator under study was the fifth in the Interconnection Queue, the generators that have a higher Interconnection Queue position that are seeking qualification for the Forward Capacity Auction will be included within the analysis
  - The new unit under study, overloads within or neighboring the Load Zone to which it is electrically connected must be addressed but it is not required to upgrade interfaces that form the boundaries between existing Load Zones

Initial Interconnection Analysis

- Analysis of New Capacity under FCM differs from the Interconnection Request (IR) process and does not bypass the LGIP/SGIP
- LGIP/SGIP is more time-consuming than Initial Interconnection Analysis and may identify problems/costs not revealed by Initial Interconnection Analysis
- All New Capacity must complete the LGIP/SGIP before becoming interconnected
- An LGIP/SGIP IR may be submitted at anytime before, during or after the FCM Qualification process
  - Submitting an IR earlier in the process will provide more detailed information to the Project Sponsor regarding necessary interconnection and network transmission upgrades and their cost

Initial Interconnection Analysis Compared with LGIP/SGIP Analysis

FCM Market Element	Interconnection Analysis under FCM	Potential System Impact Scope of Analysis Required before the project can Interconnect
New Generating Capacity – Never Previously Listed	• Thermal • Short-Circuit • Overlapping Interconnection Impacts • Identify Violations • Determination whether upgrades can be implemented in time for the Commitment Period	• Thermal • Short-Circuit • Voltage • Stability • Identify Violations • Develop Solutions & Costs
New Generating Capacity – Capacity Addition to Existing Capacity	• Thermal • Short-Circuit • Overlapping Interconnection Impacts • Identify Violations • Determination whether upgrades can be implemented in time for the Commitment Period	• Thermal, • Short-Circuit • Voltage • Stability • Identify Violations • Develop Solutions & Costs
New Generating Capacity – Re-powering Modification to Existing Capacity	• Thermal • Short-Circuit • Overlapping Interconnection Impacts • Identify Violations • Determination whether upgrades can be implemented in time for the Commitment Period	• Thermal (if greater MW) • Short-Circuit • Voltage • Stability • Identify Violations • Develop Solutions & Costs
New Generating Capacity – Modifications to comply with Environmental Regulations	• None (provided no change in capacity or major electrical equipment)	• None (provided no change in capacity or major electrical equipment)

FCM Qualification Interconnection Analysis Examples

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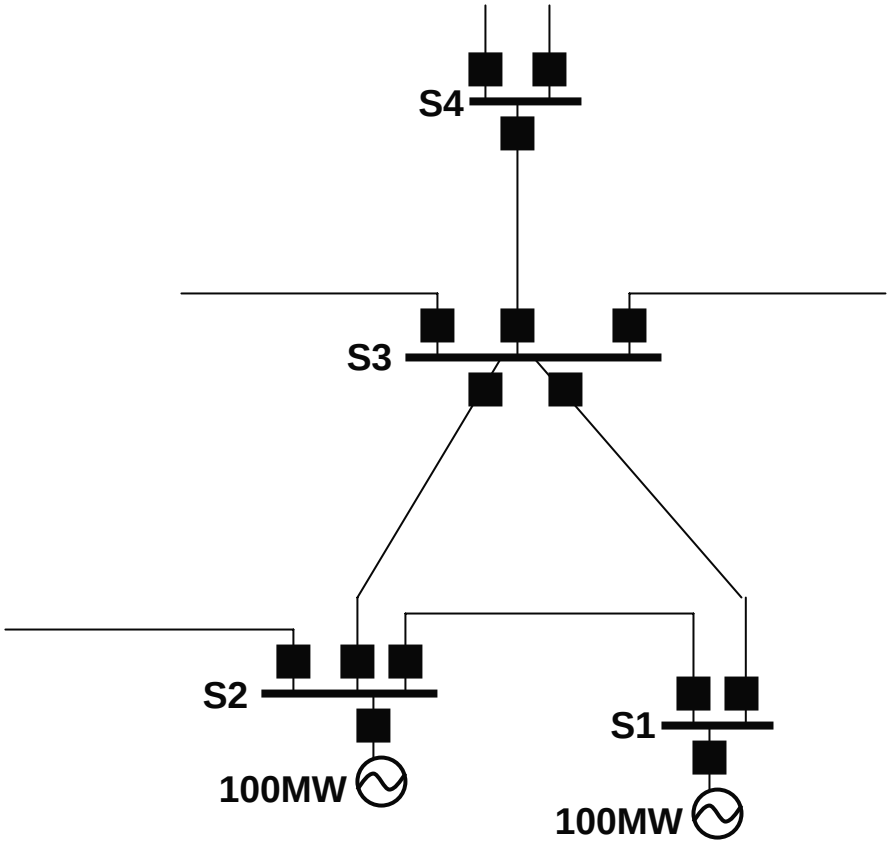
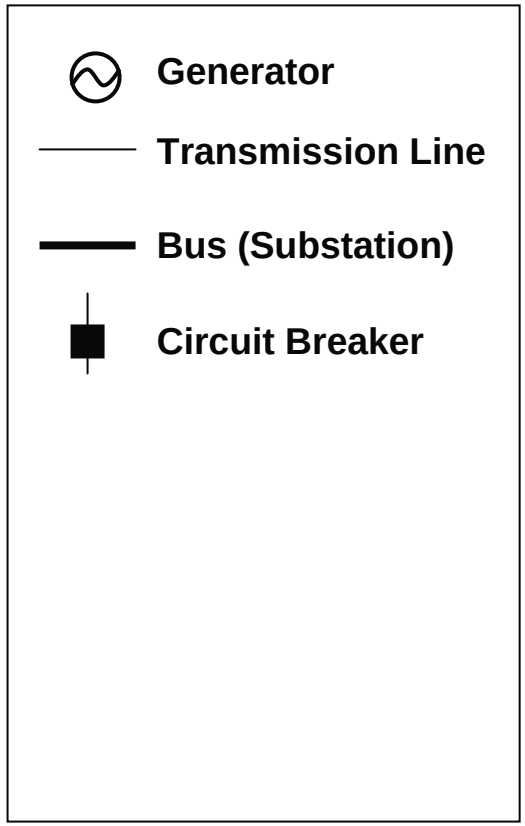
Scope of Work Discussion

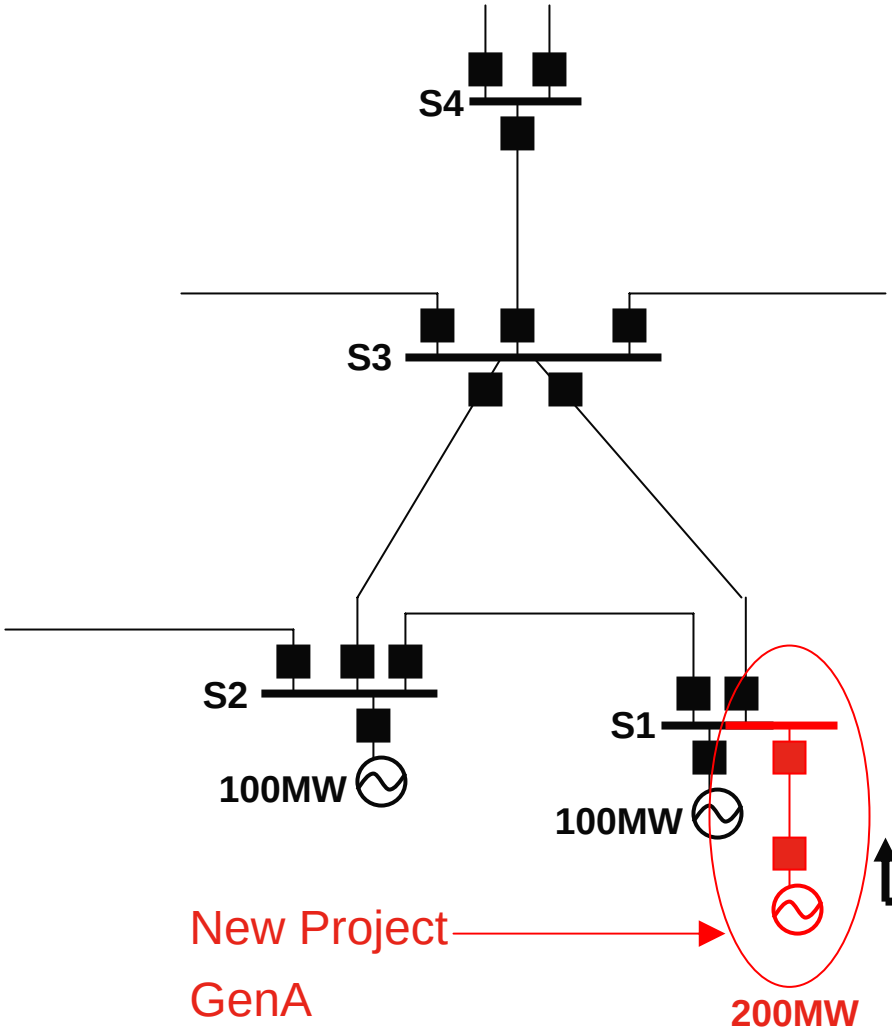
- The following slides describe the approximate process for Feasibility Analysis under the LGIP
- They are not intended to be an exact description of all studies under the LGIP process
- They are provided to background to the discussion regarding the Scope of Work for Initial Interconnection Analysis

Power System





New Interconnection



Feasibility Scope of Work for: Analysis of the Interconnection Facilities (Direct Connect)

a) Can the substation accommodate the expansion (physical space)?

b) Can the bus-work be expanded?

c) Room for a new breaker?

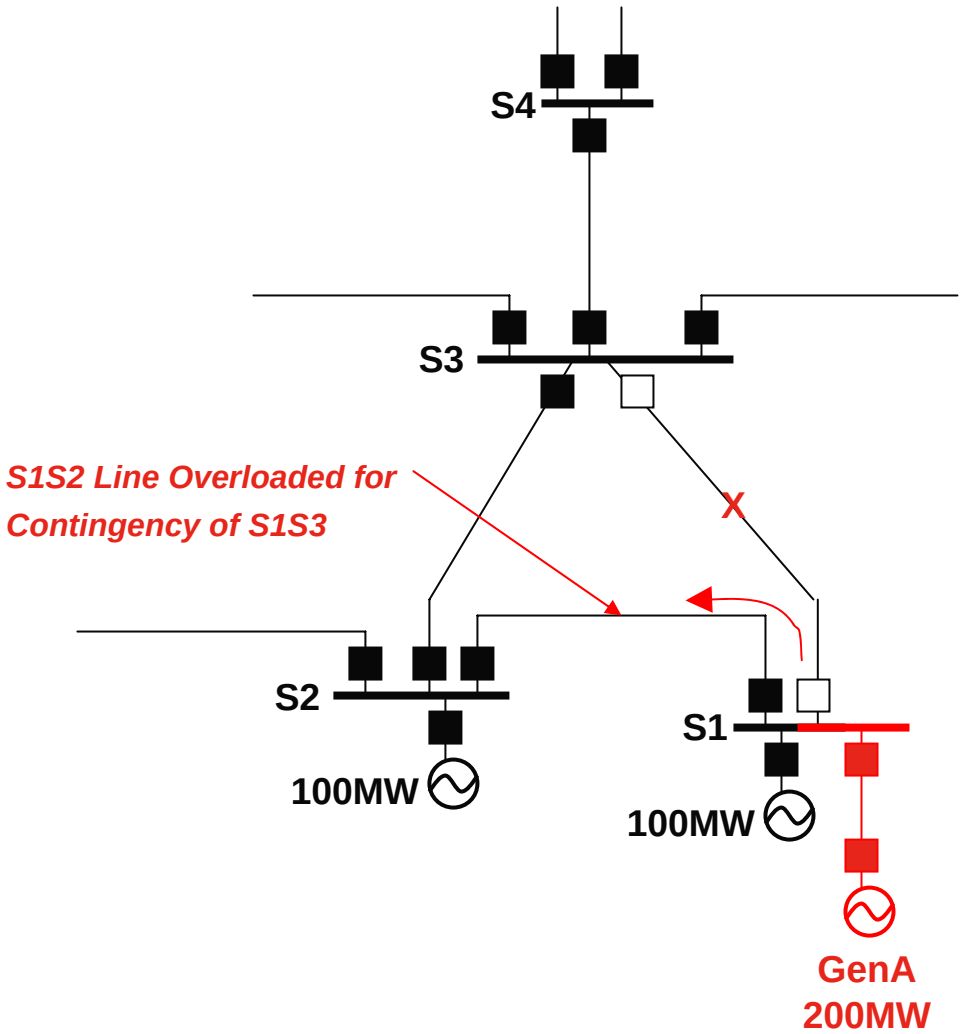
d) What are the Right-of-Way, permitting and constructability issues for the line entering the substation?

e) How long will this work take?

f) How much will upgrades cost?

FCM Analysis Scope

Thermal (Power Flow Analysis)



Feasibility Scope of Work for: Thermal Power Flow Analysis

a) Build model for new project equipment into base-case database

b) Choose base case conditions for analysis (including dispatch and load level)

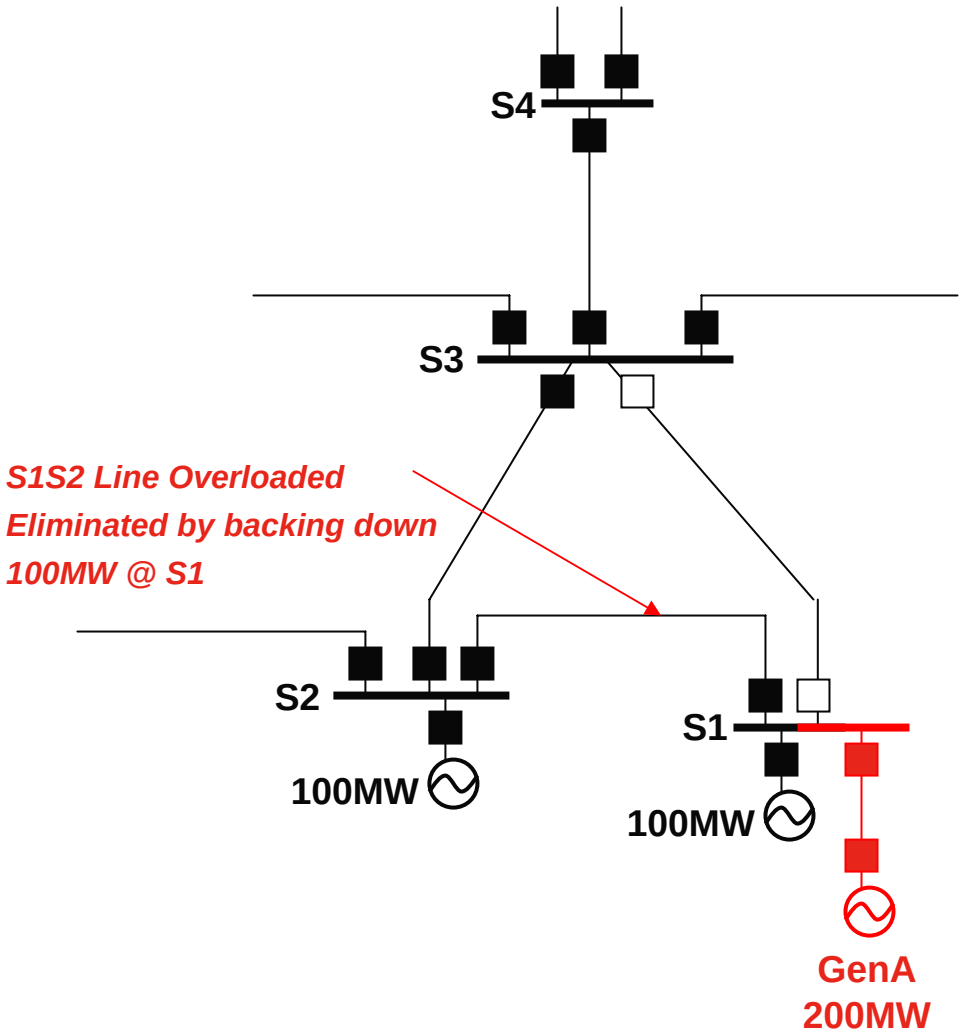
c) Model New project at nameplate output capability

d) Run contingency analysis (i.e. model the effect of the outage of all contingencies in the contingency list)

e) Record any Overloads/Violations

f) Repeat (b) through (e) above for different dispatches until a range of reasonably stressed conditions have been modeled

Thermal (Power Flow Analysis), cont.



Feasibility Scope of Work for: Thermal Power Flow Analysis (Minimum Interconnection Std)

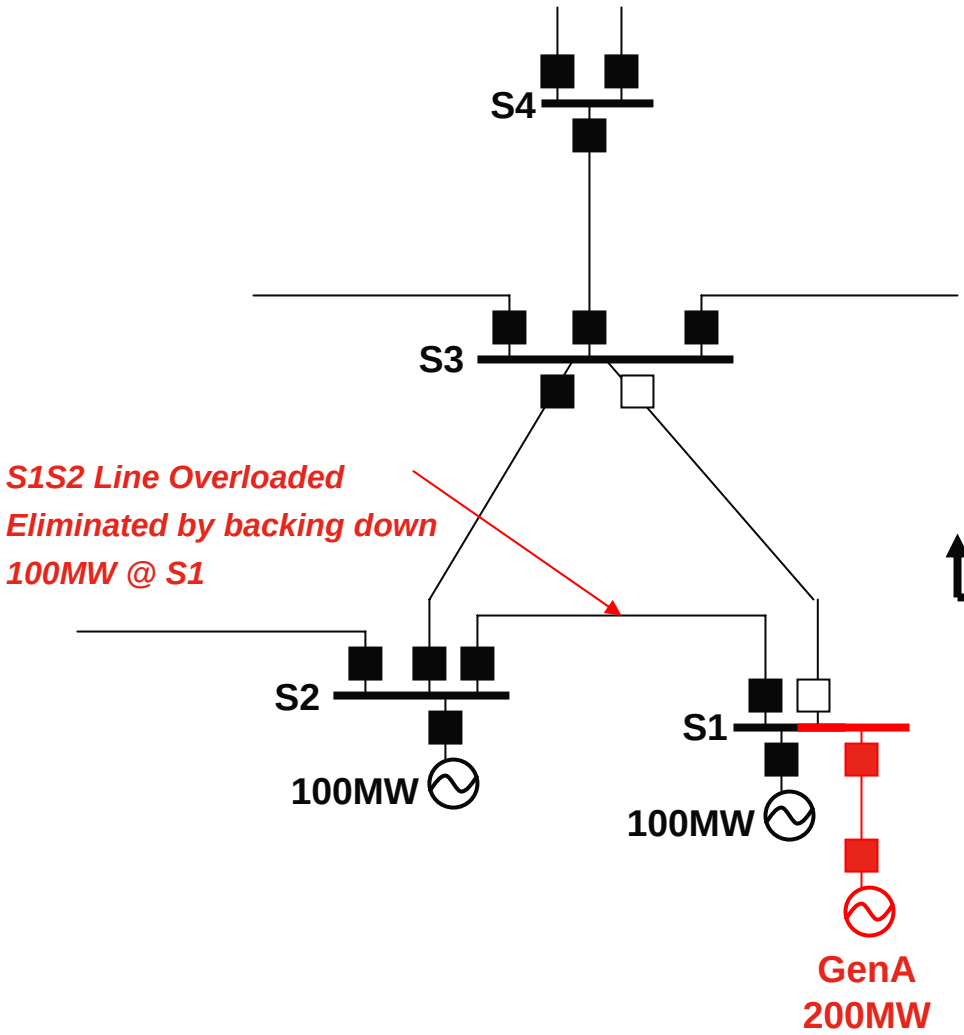
g) Test to see if any overload can be eliminated by backing down other (nearby) generation

- Rule: Cannot back down more generation than is being added
- Rule: Cannot "create" must-run

h) Overloads that could not be eliminated by re-dispatch are assigned as issues for GenA

i) Note that there is now 300MW of generation at S1, but only 200MW can run without upgrading S1S2 line (More on this later)

Thermal (Power Flow Analysis), cont.



Feasibility Scope of Work for: Analysis of Upgrade Alternatives

a) Overloaded line must be analyzed

- Is the limit the conductor rating or terminal equipment?
- Could the line be re-sagged (new towers)?
- Could the line be re-conductored (new towers?)?
- TO discussions and line survey required?

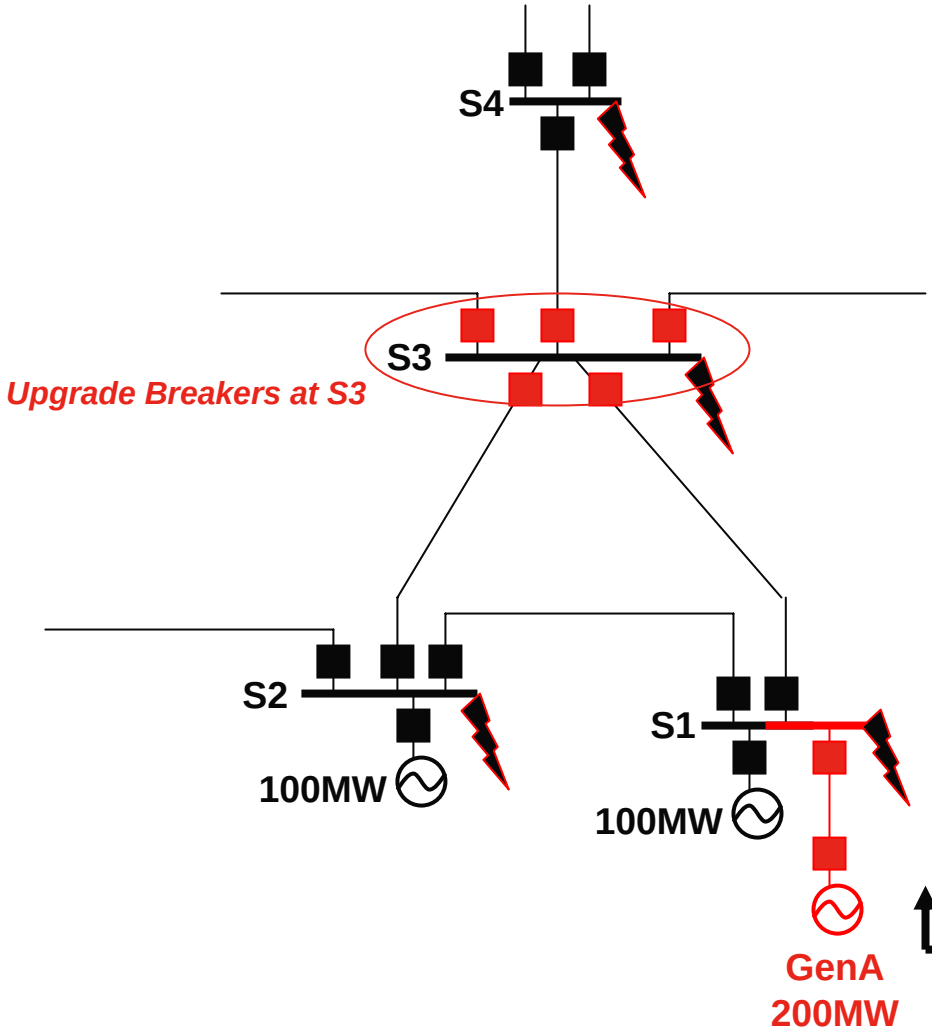
FCM Analysis Scope

b) Develop & study alternatives

- New Line
- Re-conductor/Re-sag
- Add reactor to limit flow
- SPS

c) Choose best alternative and develop cost and schedule estimates

Short Circuit Analysis



Feasibility Scope of Work for: Short Circuit Analysis

a) Build model for new project equipment into base-case database

b) Choose base case conditions for analysis (normally for short circuit analysis all generators are running i.e. not MIS)

c) Run Study to determine fault levels

d) Identify over-dutied breakers

e) Room for bigger breakers?

f) Can the bus-work be expanded?

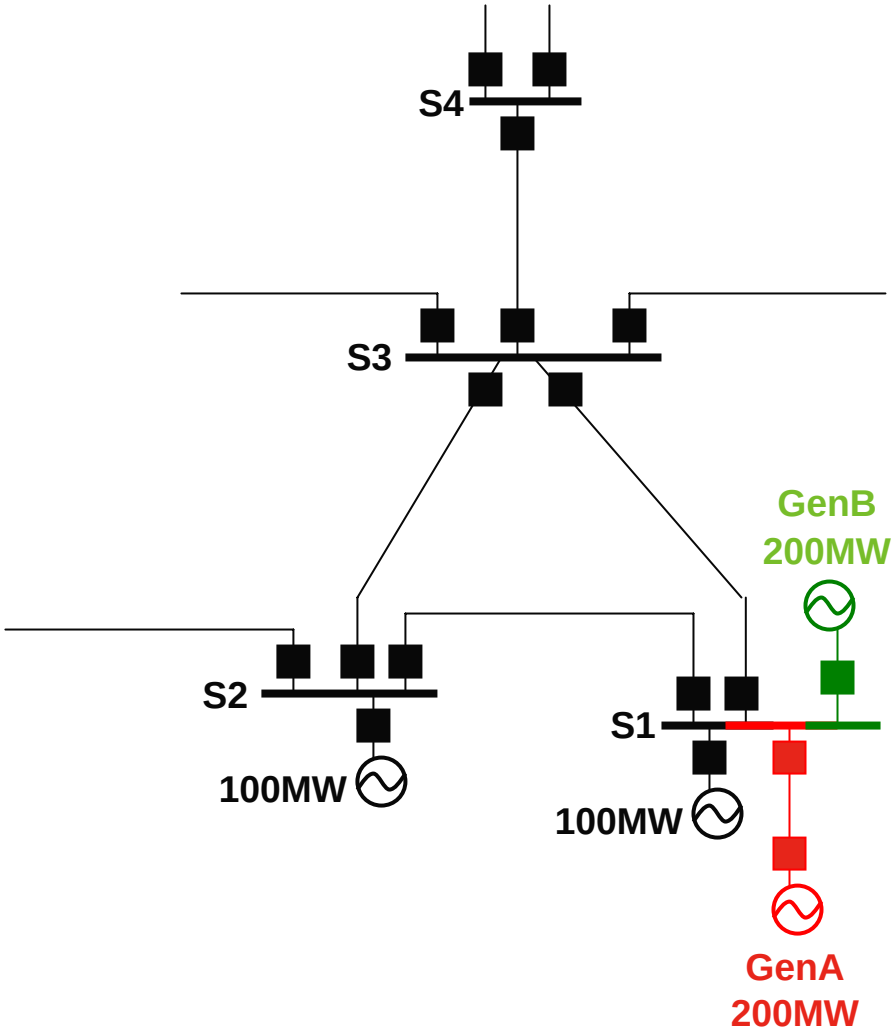
g) Discussion with TO and substation visit required?

h) How long will this work take?

FCM Analysis Scope

i) How much will upgrades cost?

Cumulative Effects



Scope of Work for:
Lower Queued Project - GenB has lower queue position than A

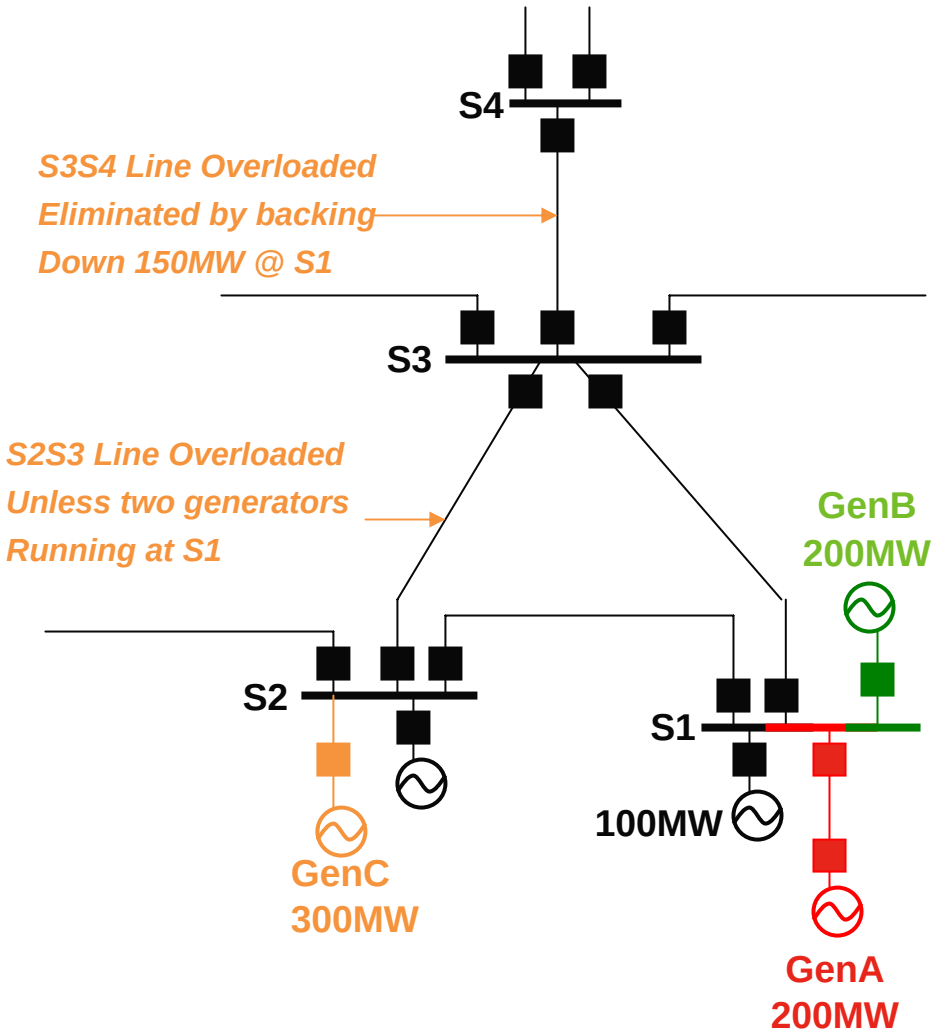
a) For GenB Perform all of the analysis described for GenA

b) Per MIS, GenB could displace GenA but would still have to upgrade S1S2 to handle 200MW total at S1

c) However, we must study GenB assuming GenA gets built and the Upgrades for GenA

d) GenB Short Circuit study will be incremental to GenA but will assume that GenA has upgraded breakers at S3

Cumulative Effects, cont.



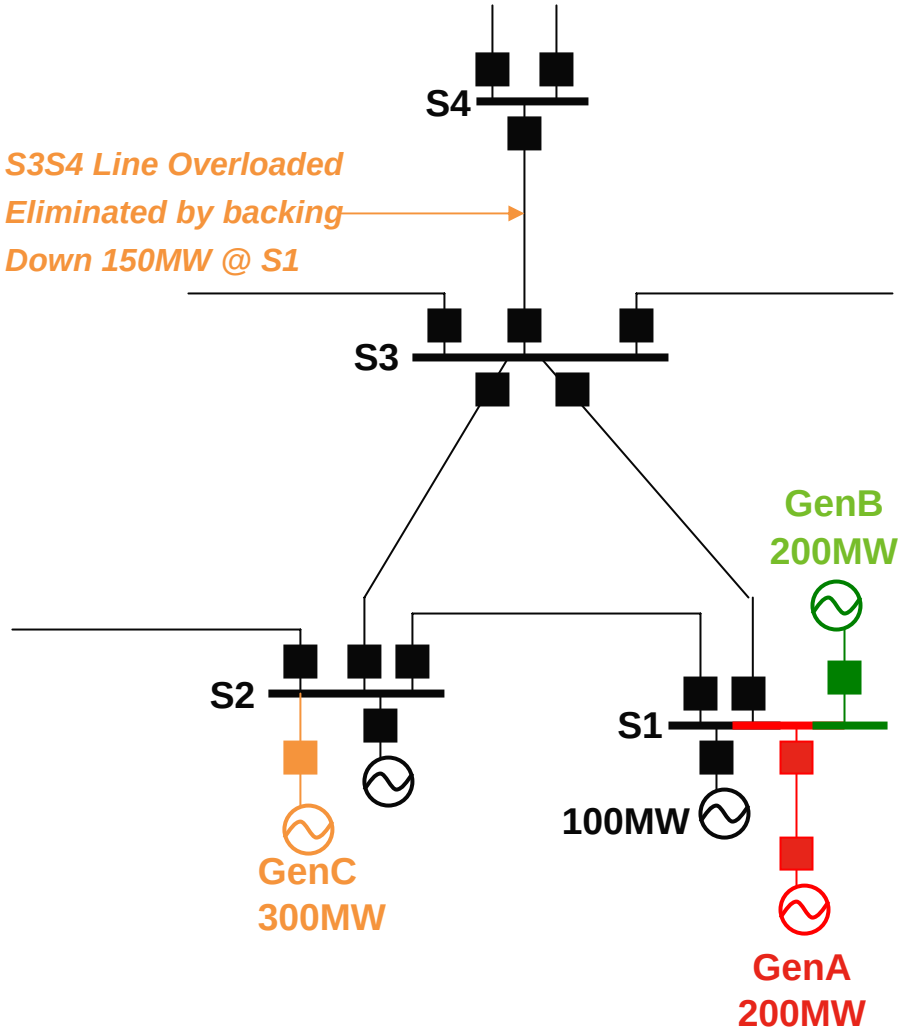
Scope of Work for: Lower Queued Project

a) For GenC Perform all of the analysis described for GenA

b) S2S3 is an overload for GenC, unless we assume GenA & GenB get built

c) S3S4 overload is Gen C's responsibility but is a result of the cumulative effect of GenC & GenB & Gen A (Cascading Impact)

Overlapping Impacts Example



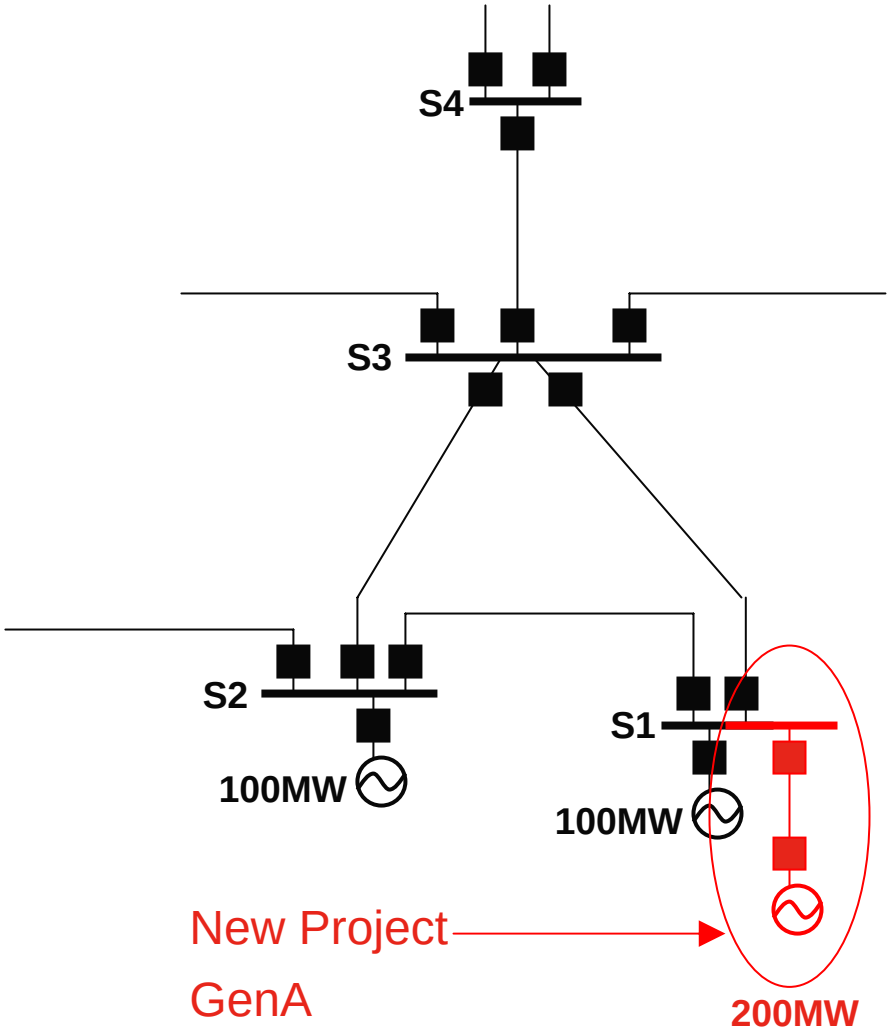
Overload of S3S4

a) As the analysis descended down the queue S3S4 only became overloaded when GenC was added

b) Note that generation added at S1 and S2 have different relative impacts on the S3S4 line

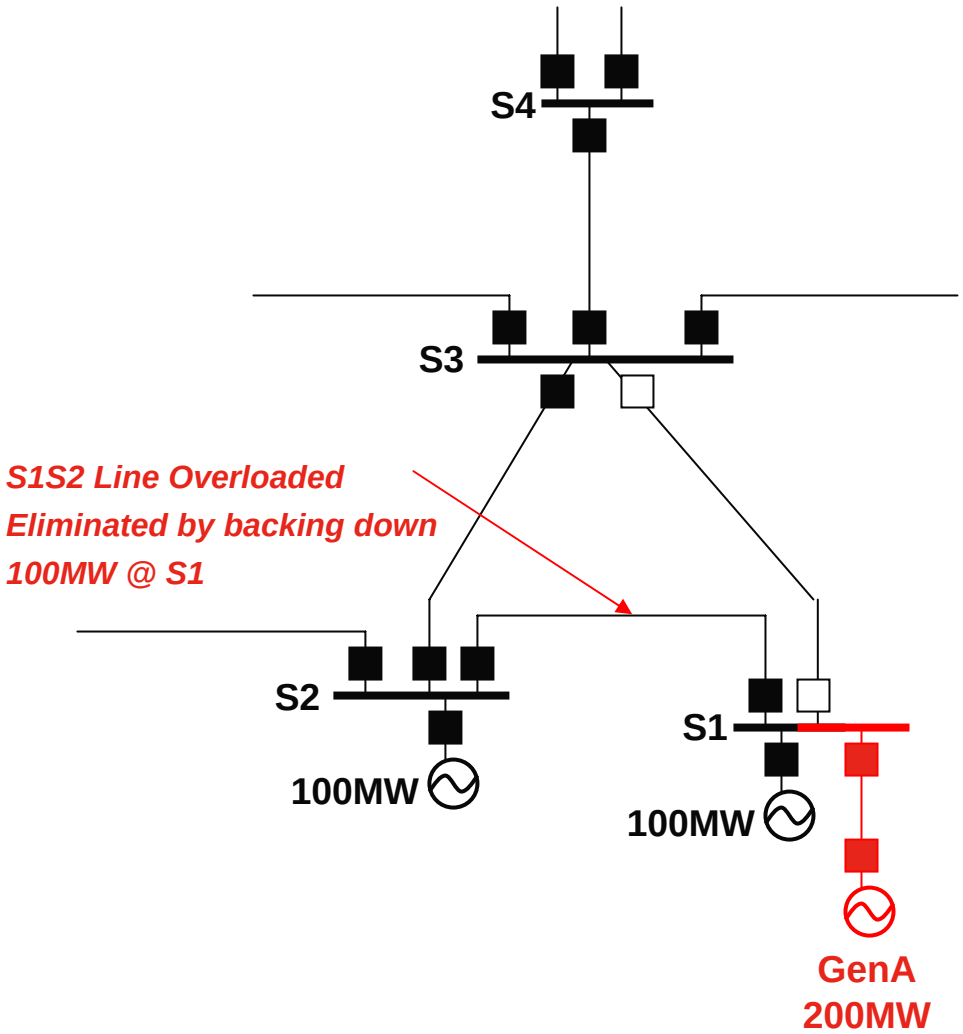
Examples from the First FCA

Examples from First FCA: Direct Connect



- What are the Right-of-Way, permitting and constructability issues for the line entering the substation?
- 5 proposals failed Direct Connect review
- Combinations of:
  - Significant distance to the interconnection point
  - Interconnection point itself not finalized
  - Crowded right-of-ways
  - Multiple land ownership issues

Overlapping Impacts Example



Overload of Line S1S2

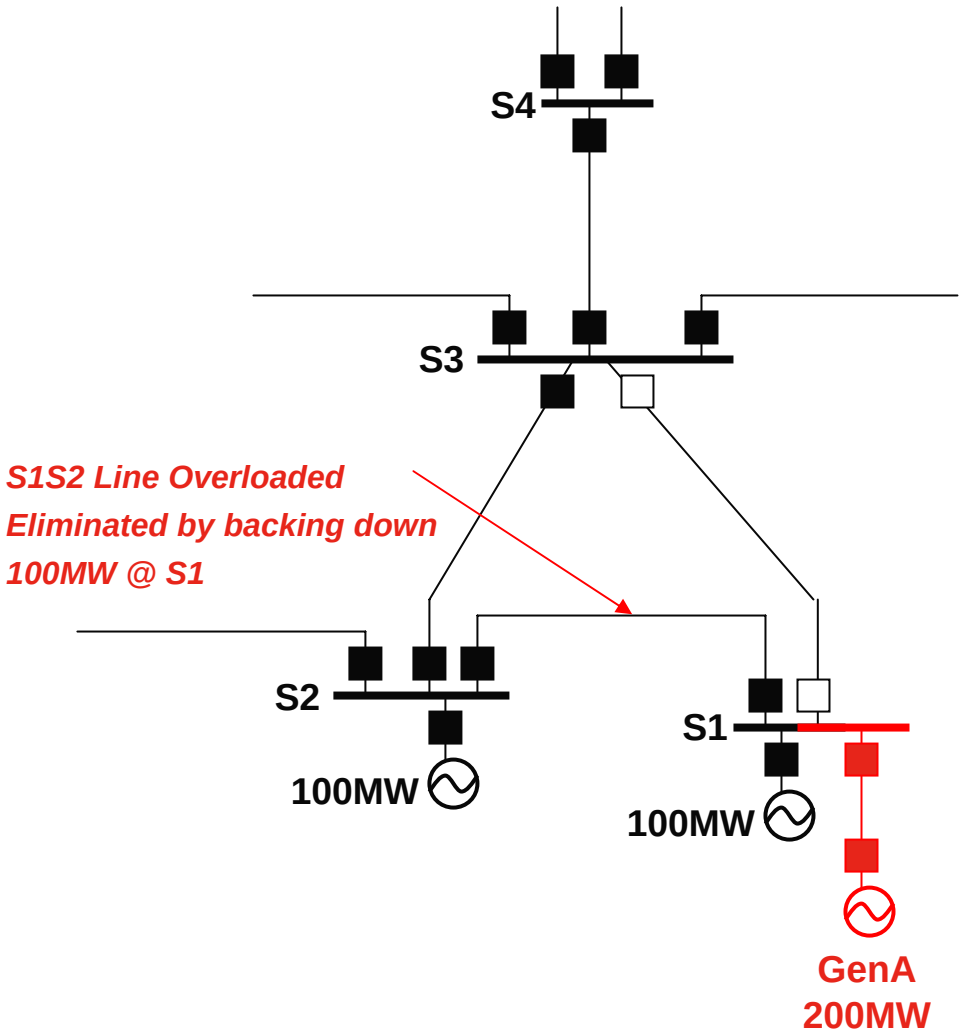
a) Note that there is now 300MW of generation at S1, but only 200MW can run without upgrading S1S2 line

b) Alternatives for FCM are

1. Qualify GenA at 100MW
2. If upgrade can be done by the start of the Capacity Commitment Period, then qualify GenA at 200MW

Note: Overall approach is to add generators by queue position until a violation that cannot be upgraded in time for the Commitment Period

Overlapping Impacts Example, cont.



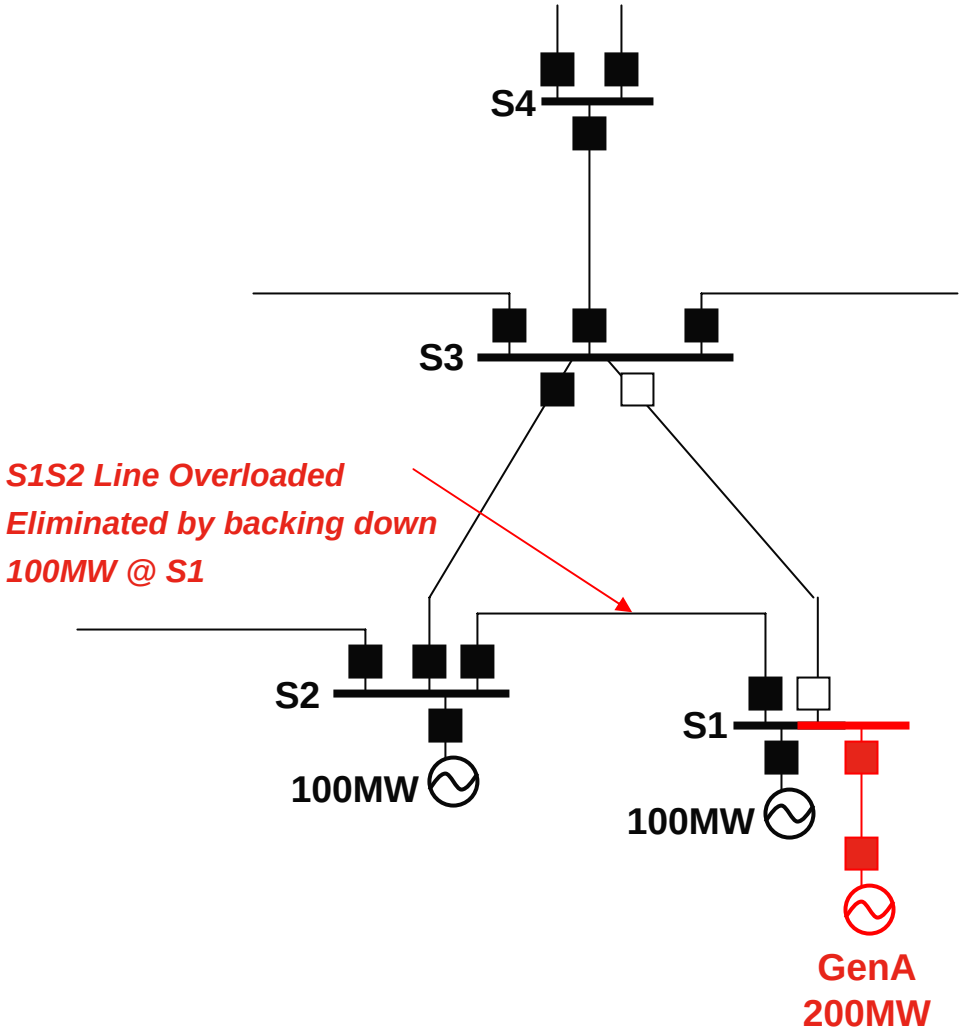
Overload of Line S1S2

a) Note that there is now 300MW of generation at S1, but only 200MW can run without upgrading S1S2 line

b) Alternative #1: Qualify GenA at 100MW (Upgrades could not be completed in time)

- FCA #1 had two cases where projects were qualified at less than the initial requested qualified MW
- In one case, the MW were reduced after consultation
- In the other case, MW were reduced in the Determination Letter

Overlapping Impacts Example, cont.



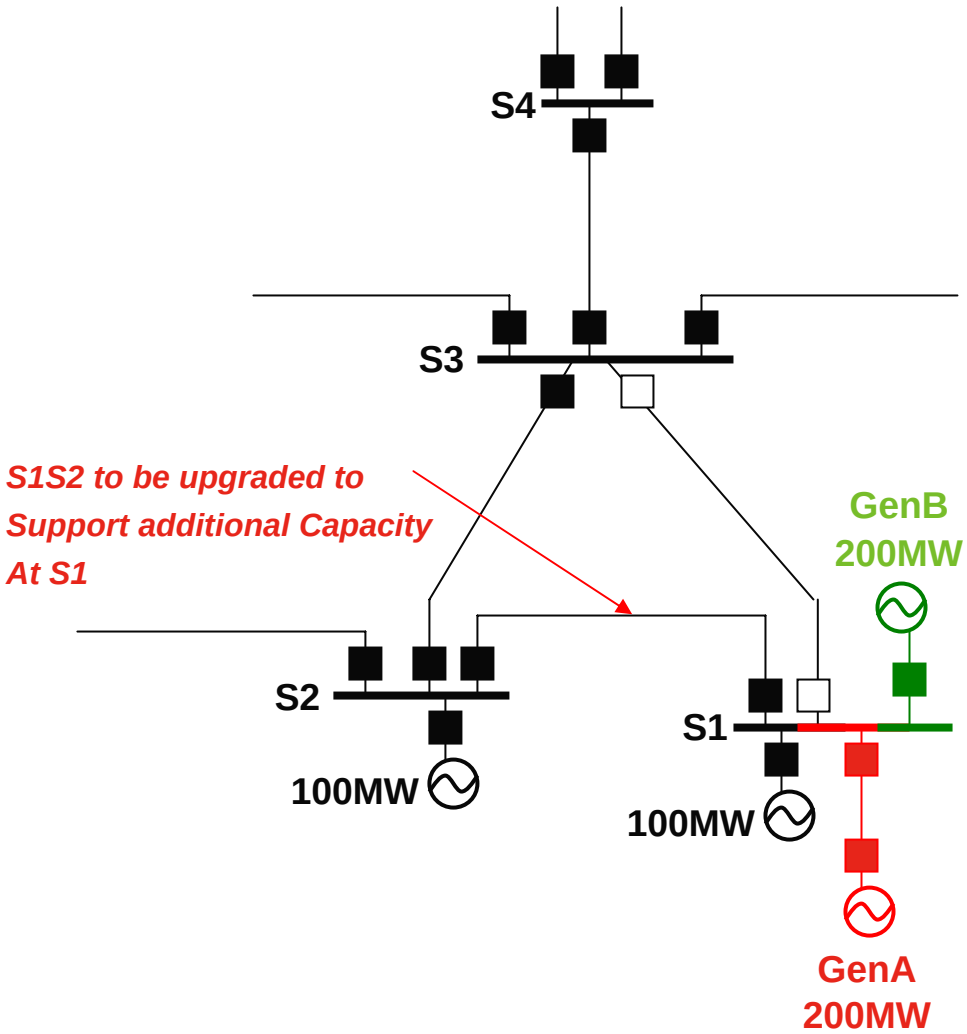
Overload of Line S1S2

a) Note that there is now 300MW of generation at S1, but only 200MW can run without upgrading S1S2 line

b) Alternative #2: If upgrade can be done by the start of the Capacity Commitment Period, then qualify GenA at 200MW

- FCA #1 had one case where the resource is required to perform upgrades by the start of the Commitment Period
- Several cases where resources were qualified because the TO is performing upgrades

Overlapping Impacts Example, cont.

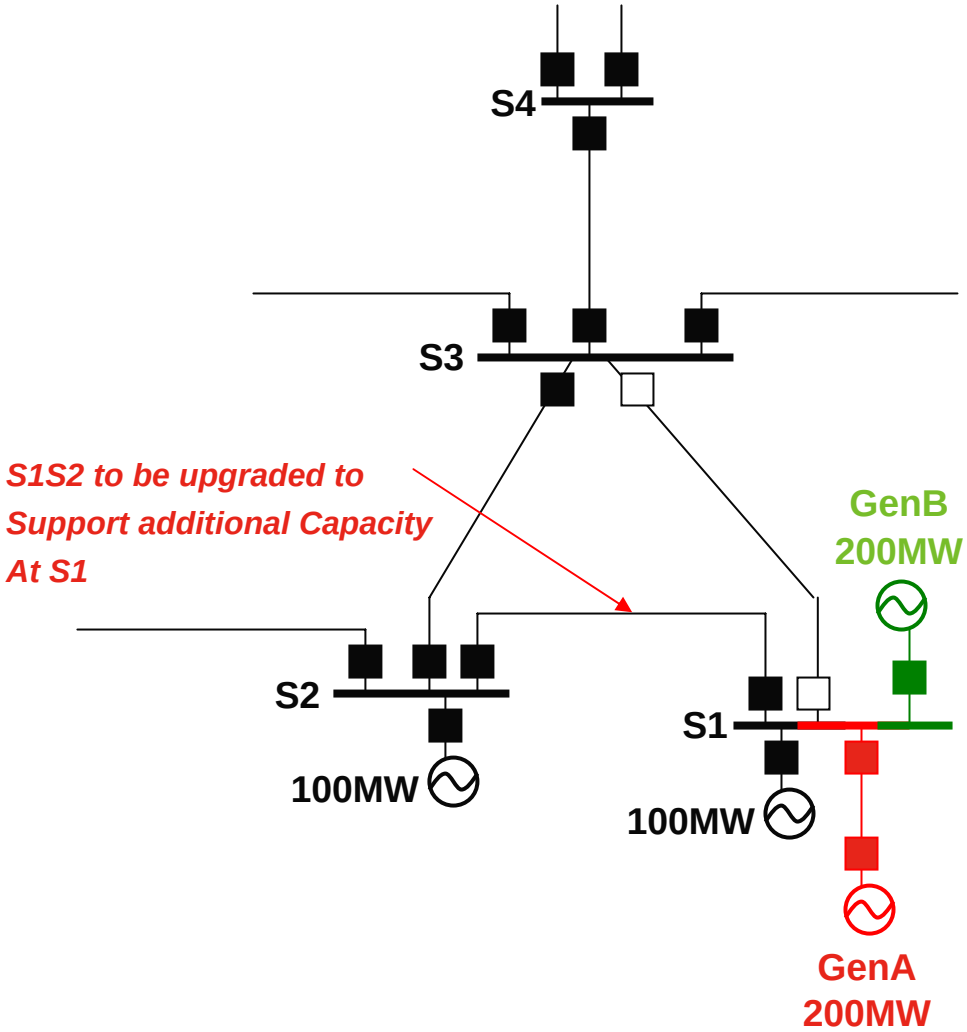


Lower Queued Project - GenB has lower queue position than GenA

Both in First FCA

- One case where Qualified GenA at 100MW (Upgrades could not be completed in time)
- GenB with lower Queue Position not qualified
- GenA could withdraw after qualification or withdraw during the FCA
- If GenA clears in the FCA then GenB is studied in the 2nd FCA with GenA as Existing
- If GenA withdraws then analysis for 2nd FCA looks the same as the analysis for the 1st FCA

Overlapping Impacts Example, cont. (Hypothetical)

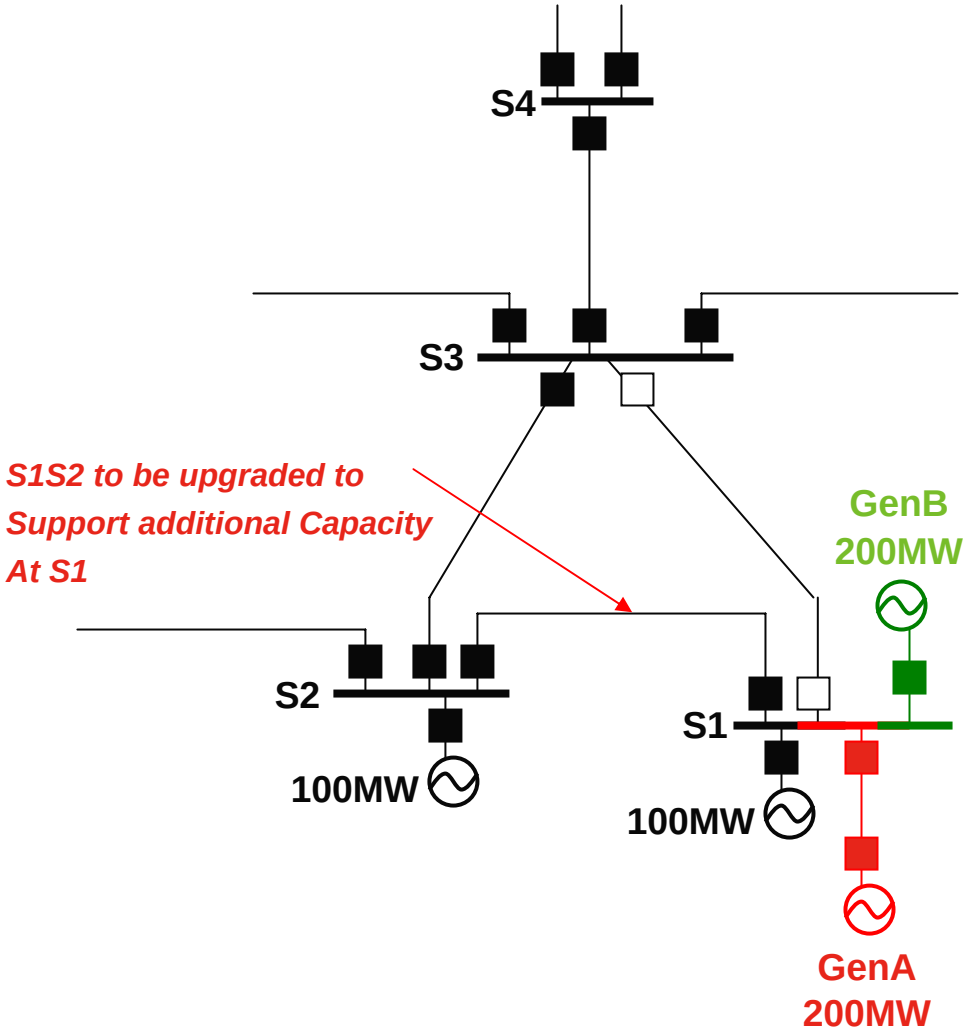


Lower Queued Project - GenB has lower queue position than GenA

GenA in First FCA
GenB not in First FCA

- GenA could withdraw after qualification or withdraw during the FCA
- If GenA clears in the 1st FCA then GenB is studied in the 2nd FCA with GenA as Existing
- If GenA withdraws then analysis for 2nd FCA looks the same as the analysis for the 1st FCA

Overlapping Impacts Example, cont. (Hypothetical)



Lower Queued Project - GenB has lower queue position than GenA

GenA not in First FCA
GenB in First FCA

- Could Qualify GenB at 100MW
- GenB could withdraw after qualification or withdraw during the FCA
- If GenB clears in the 1st FCA then GenA is studied for Overlapping Impacts) in the 2nd FCA with GenB as Existing
- If GenB withdraws then analysis for 2nd FCA would use Queue Position if both projects re-applied
- Recall that GenB LGIP interconnection costs are still dependent (in part) on GenA