

ISO-NE PAC MEETING

1/27/2026

Belmont #98 Asset Replacements



This document has been reviewed and does not contain Critical Energy/Electric Infrastructure Information (CEII).

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Project Summary

Project Drivers

- The existing 1600 A, 115 kV breakers are oil filled circuit breakers (OCBs) installed in 1965.
 - The 9801 breaker has a history of oil leaks and air system trouble and noticeable rusting in the housing.
 - The 9802 breaker has history of air system trouble and noticeable rusting in the housing.
- Difficult to source spare parts due to model and vintage.

Preferred Alternative

Alternative	Description	Cost Estimate
Base Alternative	<ul style="list-style-type: none">• PTF<ul style="list-style-type: none">• Replace the 115 kV 1600 A 9801 & 9802 OCBs with 2000 A vacuum circuit breakers (VCBs) and relaying.• Replace the breaker isolation disconnect switches (9801-1, 9801-2, 9802-1, 9802-2).• Remove the 9801 disconnect switch and the grounding switch attachment 9801-1G.• Non-PTF<ul style="list-style-type: none">• Replace the 98-1 transformer disconnect switch with 115 kV circuit.• Install conduit from control enclosure to the U2 structure for existing OPGW fiber interconnection and tie-in to control enclosure.	\$7.3M PTF (+/-25%) \$1.4 non-PTF (+/-25%)

*No larger needs exist to require further holistic evaluation, per the Asset Condition Process Guide p. 29

Outline

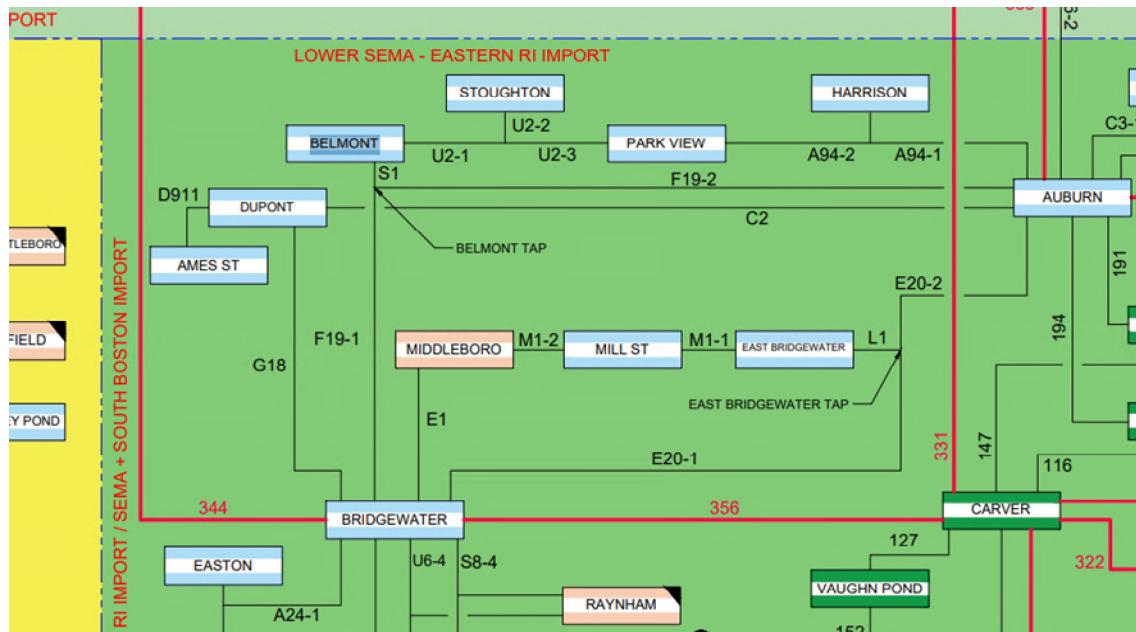
- Background
- Station Diagrams
- Aerial View
- Project Needs and Drivers
- Review of Relevant Transmission Studies
- Evaluated Solution
- Schedule
- Appendix
- Questions

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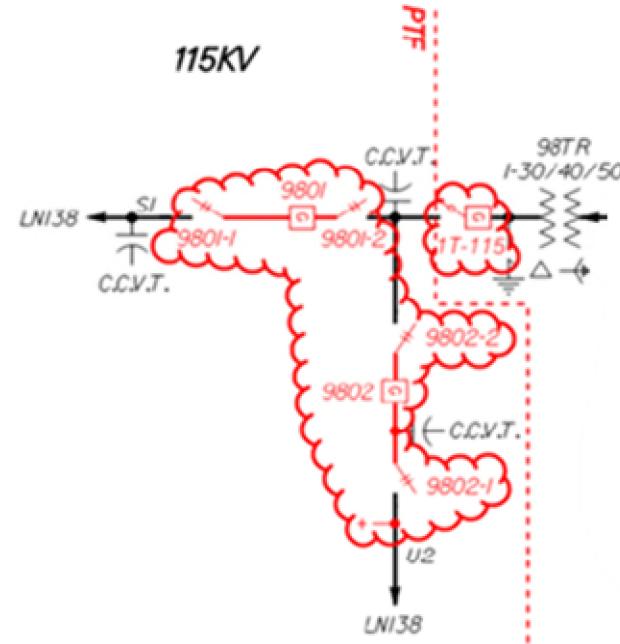
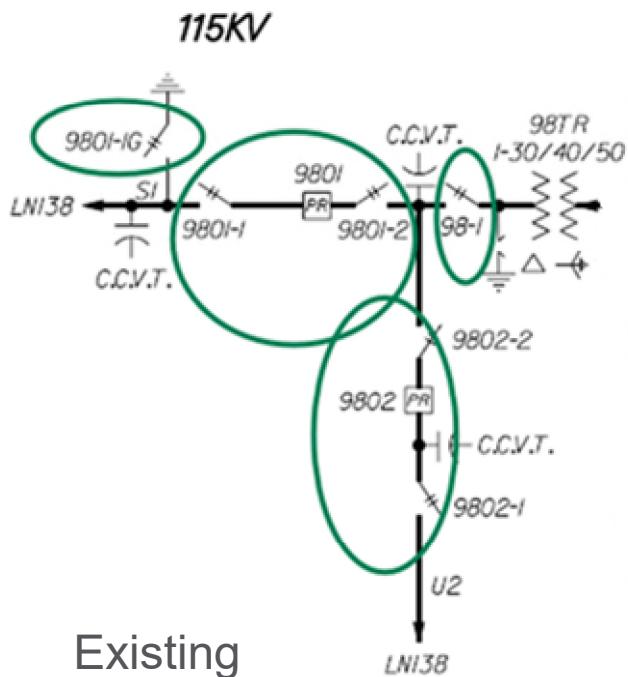
Background

The Belmont #98 substation is located in Brockton, MA. The station was built in the late 1960's and serves six 13.8 kV distribution circuits via two 115 kV PTF lines via a single 115 kV/13.8 kV transformer.



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Station Diagrams



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Aerial View



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Project Needs and Drivers

Asset issues:

- The 9801 breaker has a history of oil leaks and air system trouble and noticeable rusting in the housing.
- The 9802 breaker has history of air system trouble and noticeable rusting in the housing.
- Difficult to source spare parts due to model and vintage.
- Replacing the disconnect switches with motor operated disconnects (MOD) to allow for automatic load restoration after a failed breaker operation.



Signs of oil leak on the B-phase of the 9801 breaker

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Review of Relevant Transmission Studies

Recent Transmission Studies

Were any lines at the station overloaded in recent Attachment K studies (Reliability Needs Assessments, Longer-Term Transmission Studies, etc.) or other recent studies?

- No line overloads are shown up to 2050.

Have modifications or upgrades to this line been identified as potential solutions in any of those studies?

N/A

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Evaluated Solution

Preferred Alternative

Description	<ul style="list-style-type: none">Replace the 115 kV 1600 A 9801 & 9802 OCBs with 2000 A VCBs and relaying.Replace the breaker isolation disconnect switches (9801-1, 9801-2, 9802-1, 9802-2).Remove the 9801 disconnect switch and the grounding switch attachment 9801-1G.Replace the 98-1 transformer disconnect switch with 115 kV circuit switcher.Install conduit from control enclosure to the U2 structure for existing OPGW fiber interconnection and tie-in to control enclosure.
Primary Needs Addressed	Yes
Secondary Needs Addressed	None
Advanced transmission technologies to be considered	None
Cost Estimate and Accuracy	\$7.3 M PTF (+/-25%) , \$1.4 M non-PTF (+/-25%)
Impact on transmission needs or concerns from recent studies	None
Key standards or criteria affecting design if different than current design	Replacement of OCBs with VCBs

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Schedule

Planned Schedule	
Comment Deadline	February 10th, 2026
Contact	National Grid – Rafael Panos: pac.questions@nationalgrid.com ISO-NE: pacmatters@iso-ne.com
Follow-up PAC Presentation	No
Start of Major Construction	June 2026
Project in Service	May 2027

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Questions

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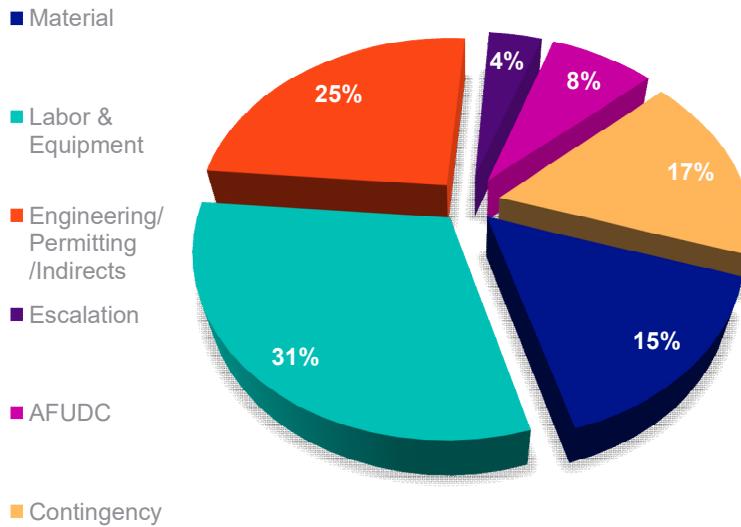


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Appendix

Additional Cost Detail

Project Cost Summary Belmont #98		
Cost Category	PTF	non-PTF
Material/Handling	\$1.16 M	\$0.2 M
Labor/Equipment	\$2.1 M	\$0.6 M
Right of Way	-	-
Engineering/Permitting/Indirects	\$1.87 M	\$0.3 M
Escalation	\$0.31 M	\$0.05 M
AFUDC	\$0.6 M	\$0.11 M
Contingency	\$1.26 M	\$0.2 M
TOTAL	\$7.3 M	\$1.46 M



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