Exhibit GMP-8

STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Application of Green Mountain Power Corporation under 10 V.S.A. Chapter 43 for authorization to make changes to the Molly's Falls Hydroelectric Facility in Cabot, Marshfield, and Peacham, Vermont	)))))	Case No. 18-2549-PET

MEMORANDUM OF UNDERSTANDING BETWEEN GREEN MOUNTAIN POWER CORPORATION AND THE VERMONT AGENCY OF NATURAL RESOURCES

With respect to the above-referenced application, Green Mountain Power Corporation ("GMP" or "Applicant"), and the Vermont Agency of Natural Resources ("ANR" or "the Agency") (collectively the "Parties") hereby agree and stipulate in this Memorandum of Understanding ("MOU") as follows:

WHEREAS, on June 29, 2018, GMP filed an application with the Public Utility Commission ("PUC" or "Commission") under 10 V.S.A. Chapter 43 to make certain "Proposed Physical Changes" and "Proposed Operational Changes" (collectively, the "Project") to the Molly's Falls Hydroelectric Facility (the "Facility"); and

WHEREAS, on July 23, 2018, ANR entered an appearance in this matter; and

WHEREAS, on February 20, 2019, ANR submitted testimony and exhibits recommending alternative operational changes to the Facility; and

WHEREAS, on May 3, 2019, GMP submitted rebuttal testimony and exhibits responding to ANR's recommended alternative operational changes; and

WHEREAS, on May 31, 2019, the Agency served discovery on GMP's rebuttal testimony and exhibits; and

WHEREAS, the schedule in this proceeding required that GMP respond to discovery by June 28, 2019, and that the Agency file surrebuttal testimony by August 9, 2019; and

WHEREAS, the Parties, having had an opportunity to review and assess the application materials, prefiled testimonies, and discovery questions and responses, have agreed that neither

discovery responses nor Agency surrebuttal testimony are necessary because the Parties have resolved all outstanding issues between them related to the Project, and have agreed that in order for the intent of the parties as expressed in this MOU to be realized, the conditions set forth herein must be included in any Certificate of Public Good ("CPG") issued by the Commission.

THEREFORE, in consideration of the above and the undertakings and covenants set forth below, the Parties hereby agree as follows:

I. GMP shall submit to the Commission supplemental prefiled testimony and exhibits that describe and depict the changes to the Project agreed to by ANR and GMP (the "Revised Project"), as reflected in the proposed conditions for Commission approval specified in Section III of this MOU, and to conform the Project to those conditions.

II. The Agency's Department of Fish and Wildlife shall file with the Commission the certified results of its investigation into the Revised Project's potential effects on fish and wildlife habitats, pursuant to 10 V.S.A. § 1084.

III. GMP and ANR agree that the following conditions must be included in any Certificate of Public Good issued by the Commission in this matter, and that the terms and conditions of this MOU shall supersede any inconsistent prefiled testimony and exhibits:

A. <u>Peacham Pond Water Level Management:</u>

1. The Normal Operating Level ("NOL") of Peacham Pond shall remain at 1,401.9 feet above mean sea level (NGVD29).

2. GMP shall ensure that the water level of Peacham Pond equals the Peacham Pond NOL no later than May 1 unless the criteria for delayed refill timing set forth in Section III of Attachment A are met.

3. Between May 1 (or the date of refill to the Peacham Pond NOL, whichever is later), and July 31 (or the date that the Agency determines that loon nesting is completed at Peacham Pond, whichever is earlier), GMP shall maintain water levels of Peacham Pond in accordance with the loon protocols presented in Section IV of Attachment A.

4. Between August 1 (or the date that the Agency determines that loon nesting is complete at Peacham Pond, whichever is earlier) and November 30, GMP shall maintain water levels of Peacham Pond within 1 foot above or below the Peacham Pond NOL.

5. GMP shall complete an assessment of outlet works modifications ("OWM") for Peacham Pond to improve management of water levels and streamflow to enable changes to the winter drawdown regime. Within two (2) years following Commission approval of the Revised Project, GMP shall design the OWM and shall apply for permits and approvals needed for OWM construction.

6. In order to implement operational or other modifications to the outlet of Peacham Pond, between December 1 and April 30, for the first five years following Commission approval of the Revised Project, GMP may conduct winter drawdowns of Peacham Pond, subject to the conditions herein and Attachment A. Winter drawdown of Peacham Pond shall not exceed 6.6 feet from the Peacham Pond NOL, except that GMP may conduct drawdowns exceeding 6.6 feet under the conditions and criteria defined in Section II of Attachment A.

7. Within five (5) years following Commission approval of the Revised Project, GMP shall construct the OWM, subject to necessary permits and other regulatory requirements. Thereafter, between December 1 and April 30 of each subsequent year, GMP may conduct winter drawdowns of Peacham Pond subject to the conditions herein and Attachment A. Winter drawdown of Peacham Pond shall not exceed 3 feet from the Peacham Pond NOL, except that GMP may conduct drawdowns exceeding 3 feet under the conditions and criteria defined in Section I and Section II of Attachment A.

8. GMP shall stage winter water-level drawdowns of Peacham Pond to no more than 6 to 12 inches per week prior to December 15 of each year, subject to the conditions herein and Section I of Attachment A.

B. <u>Sucker Brook Flow Management</u>

1. Between December 1 and May 1 (or to the date of refill to the Peacham Pond NOL, whichever is later), GMP shall release to Sucker Brook a minimum conservation flow of 6.7 cubic feet per second ("cfs") (or the magnitude of inflow to Peacham Pond, if less), and a maximum flow of 25 cfs (or the magnitude of inflow to Peacham Pond, if greater). GMP shall implement these flow-management protocols upon implementation of the Flow and Water Level Management and Monitoring Plan pursuant to the schedule in Section III.H(4).

2. Between May 1 (or from the date of refill to the Peacham Pond NOL, whichever is later) and November 30, GMP shall manually implement run-of-river ("ROR") operations in Sucker Brook so that outflow to Sucker Brook equals the net of inflow to Peacham Pond minus evaporation from the surface of Peacham Pond. GMP shall implement these flow management protocols upon implementation of the Flow and Water Level Management and Monitoring Plan pursuant to the schedule in Section

III.H(4).

3. GMP shall develop and implement a ramping plan for transitions between drawdown, refill, and ROR periods at Peacham Pond and Sucker Brook. This plan shall be a part of the Flow and Water Level Management and Monitoring Plan that GMP shall develop and implement pursuant to Section III.H. GMP shall implement the ramping plan upon completion of construction of the Revised Project or upon Plan approval by the Commission, whichever is later.

C. <u>Molly's Falls Reservoir Water Level Management</u>

1. The NOL for Molly's Falls Reservoir shall be set approximately 4.2 feet lower than the current NOL of 1,228.2 feet above mean sea level (NGVD29), or approximately 1,224.0 feet (the "New NOL"). GMP shall determine the precise New NOL in developing the Flow and Water Level Management and Monitoring Plan, as described in Section III.H. GMP shall implement the New NOL upon implementation of the Flow and Water Level Management and Monitoring Plan pursuant to the schedule in Section III.H(4).

2. Between May 1 (or the date of refill to the Mollys Falls Reservoir New NOL, whichever is later) and July 31 (or the date that the Agency determines that loon nesting is completed at Mollys Falls Reservoir, whichever is earlier), GMP shall maintain water levels in Mollys Falls Reservoir in accordance with the loon protocols presented in Section IV of Attachment A.

3. Between August 1 (or the date that the Agency determines that loon nesting is complete at Mollys Falls Reservoir, whichever is earlier), and November 30, GMP shall maintain water levels of Mollys Falls Reservoir within 1 foot above or below the New NOL.

4. Between December 1 and April 30, GMP may perform winter drawdowns of Mollys Falls Reservoir, subject to the conditions herein and in Sections I and II of Attachment A. Winter drawdown of Mollys Falls Reservoir shall not exceed 2 feet from the New NOL (i.e., to approximately 1,222.0 feet NGVD29), except that GMP may conduct drawdowns to 5.8 feet from the New NOL, (i.e., to approximately 1,218.2 feet NGVD29) or more if needed, under the conditions and criteria defined in Sections I and II of Attachment A. GMP shall implement the drawdown protocols upon implementation of the Flow and Water Level Management and Monitoring Plan pursuant to the schedule in Section III.H(4).

5. GMP shall stage winter water-level drawdowns of Mollys Falls Reservoir to no more than 6 to 12 inches per week prior to December 15 of each year, subject to the conditions herein and Section I of Attachment A.

6. At any time during the year, with notice to the Agency's Department of Forests, Parks and Recreation and the Mollys Falls Pond State Park, GMP may conduct drawdowns of Mollys Falls Reservoir as needed to perform planned or required inspections, maintenance, or repairs on the Facility's infrastructure. On or before February 15 of each year, GMP shall provide ANR with a summary of any such drawdowns conducted during the prior 12-month period. GMP shall implement ramping pursuant to Section III.E(1) when releasing flows to the Winooski River in order to drawdown the water level of Mollys Falls Reservoir to perform planned or required inspections, maintenance, or repairs to the Facility's infrastructure.

D. <u>Mollys Brook Conservation Flow</u>

1. Between July 1 and March 31, GMP shall release to Mollys Brook a minimum conservation flow of the lesser of 8.5 cfs or the net of inflow to Mollys Falls Reservoir minus evaporation from the surface of Mollys Falls Reservoir. GMP shall implement the conservation flow upon implementation of the Flow and Water Level Management and Monitoring Plan pursuant to the schedule in Section III.H(4).

2. Between April 1 and June 30, GMP shall release to Mollys Brook a minimum conservation flow of the lesser of 12 cfs or the net of inflow to Mollys Falls Reservoir minus evaporation from the surface of Mollys Falls Reservoir. GMP shall implement the conservation flow upon implementation of the Flow and Water Level Management and Monitoring Plan pursuant to the schedule in Section III.H(4).

3. GMP shall prepare and implement a Dissolved Oxygen Monitoring Plan to confirm that the methods of releasing and aerating the conservation flows in Mollys Brook comply with the Dissolved Oxygen criteria of the Vermont Water Quality Standards. Within 6 months following Commission approval of the Revised Project, GMP shall submit the Dissolved Oxygen Monitoring Plan to ANR for comment, and thereafter to the Commission for review and approval. GMP shall implement the Dissolved Oxygen Monitoring Plan upon completion of construction of the Revised Project, or upon Plan approval by the Commission, whichever is later.

E. <u>Winooski River Generation Flows</u>

1. GMP shall use existing infrastructure to ramp up and ramp down flows released to the Winooski River from the powerhouse during generation in accordance with the conditions herein and Attachment B. GMP shall develop and implement a ramping plan for transitioning to and from generation flows. This plan shall be a part of the Flow and Water Level Management and Monitoring Plan that GMP shall develop and implement pursuant to Section III.H. GMP shall implement the ramping plan upon completion of construction of the Revised Project or upon Plan approval by the

Commission, whichever is later.

2. Between November 1 and March 31, subject to ramping, water level, and conservation flow conditions, GMP may generate power and release generation flows to the Winooski River at its sole discretion. During this period, the magnitude of generation flow shall not exceed 135 cfs (or the magnitude of inflow to Mollys Falls Reservoir, as provided for in Section III.E(4)(i), whichever is greater).

3. Between April 1 and October 31, subject to ramping, water level, and conservation flow conditions, GMP may generate power and release generation flows to the Winooski River under the circumstances described in (i) and (ii) below:

    i. When flow in the unregulated Winooski River exceeds 30 cfs as measured at the powerhouse. As described in Section III.H(3)(i), ANR and GMP may agree to use the rate of water level change in Mollys Falls Reservoir as a surrogate metric for the magnitude of flows in the Winooski River. If ANR and GMP agree on the use of a surrogate, the terms and conditions of agreement shall be included in the Flow and Water Level Management and Monitoring Plan and any releases of generation flows tied to this surrogate shall be subject to ramping, water level, and conservation flow conditions.

    ii. When the water level of Mollys Falls Reservoir reaches a mutually agreeable water level, irrespective of the magnitude of flows in the Winooski River or inflow rates to Mollys Falls Reservoir. Once ANR and GMP determine a mutually agreeable water-level trigger, as provided for in Sections III.H(1)(xii) and III.H(3)(ii), the terms and conditions of agreement shall be included in the Flow and Water Level Management and Monitoring Plan.

    iii. Irrespective of the specific trigger used for releasing generation flows during this period, the magnitude of generation flows shall not exceed 103 cfs (or the magnitude of inflow to Mollys Falls Reservoir, as provided for in Section III.E(4)(i), whichever is greater). As provided for in Section III.H(1)(xiv), GMP shall verify that 103 cfs is within the turbine's hydraulic capacity for safe operations (referred to in GMP's Ch. 43 Petition as the "Permitted Operating Zone"). In the event testing determines that 103 cfs is outside the Permitted Operating Zone, the magnitude of allowable generation flows between April 1 and October 31 and the associated ramping requirements in Attachment B shall be adjusted by mutual agreement through the Flow and Water Level Management and Monitoring Plan. Any disputes over necessary modifications to operating conditions shall be resolved by the Commission.

4. Notwithstanding the above, at any time during the year:

i. GMP may generate power and release generation flows to the Winooski River when inflow to Molly's Falls Reservoir is within the existing turbine's hydraulic capacity for safe operations as determined by the manufacturer (referred to in GMP's Petition as the "Permitted Operating Zone"), subject to ramping, water level, and conservation flow conditions. The magnitude of generation flows released to the Winooski River shall match the magnitude of inflow to Molly's Falls Reservoir.

ii. When responding to forecasted high-flow weather events described in Section II of Attachment C, GMP may generate power and release generation flows of any magnitude to the Winooski River. Ramping is not required when releasing generation flows to the Winooski River in response to weather-related high-flow events.

iii. GMP may generate power and release generation flows of any magnitude to the Winooski River for emergency purposes in order to participate in capacity markets and when responding to energy grid emergencies or capacity scarcity events in the regional (ISO-NE) and local grids (as defined in Section I of Attachment C). Ramping is not required when releasing generation flows to the Winooski River for emergency purposes.

5. GMP shall implement Section III.E upon implementation of the Flow and Water Level Management and Monitoring Plan pursuant to the schedule in Section III.H(4).

F. <u>Winooski River Generation: Dissolved Oxygen Fluctuations</u>

1. GMP shall install an aeration system within the powerhouse and shall prepare and implement a Dissolved Oxygen Monitoring Plan to confirm that the generation flows released to the Winooski River are complying with the Dissolved Oxygen criteria of the Vermont Water Quality Standards.

2. Within 6 months of Commission approval of the Revised Project, GMP shall submit the Dissolved Oxygen Monitoring Plan to ANR for comments, and thereafter to the Commission for review and approval. GMP shall implement the Dissolved Oxygen Monitoring Plan upon completion of construction of the Revised Project or upon Plan approval by the Commission, whichever is later.

G. <u>Winooski River Generation: Temperature Fluctuations</u>

1. GMP shall develop and implement a riparian zone restoration plan to close the temperature gap between generation flows released to the Winooski River and natural flows in the Winooski River, to the extent reasonable and feasible, through extensive riparian buffer restoration along the Winooski River upstream of the powerhouse. The Restoration Plan shall identify reasonable and feasible opportunities for riparian

zone restoration along the Winooski River, assess anticipated temperature impacts of implementing the feasible opportunities, and set forth a schedule for implementation. In addition, the Plan shall describe reasonable and feasible future monitoring and restoration efforts to be taken to close the temperature gap, if any are needed.

2. Within 6 months of Commission approval of the Revised Project, GMP shall submit the Restoration Plan to ANR for comment, and thereafter to the Commission for review and approval. After Commission approval, GMP shall implement the Restoration Plan in accordance with the schedule therein.

H. <u>Flow and Water Level Management and Monitoring Plan</u>

1. GMP shall develop and implement a Flow and Water Level Management and Monitoring Plan which shall include the following components:
    i. information on how the Facility will be managed to avoid non-compliance events with the conservation and maximum flow requirements for Sucker Brook, as described in Section III.B;
    ii. information on how the Facility will be managed to avoid non-compliance events with the conservation flow requirements for Mollys Brook, as described in Section III.D;
    iii. information on how the Facility will be managed to avoid non-compliance events with the generation flow requirements for the Winooski River, as described in Section III.E;
    iv. a detailed protocol for how the Facility will be operated to achieve ROR conditions in Sucker Brook, as described in Section III.B(2);
    v. a detailed ramping protocol for how the Facility will be operated to transition between drawdown, refill, and ROR periods at Sucker Brook and Peacham Pond, as described in Section III.B(3);
    vi. a detailed protocol for ramping up and ramping down the flows released to the Winooski River from the powerhouse during generation, as described in Section III.E(1);
    vii. a description of the protocol for operating the proposed penstock tap valve (conservation flow device) and spillway slide gates under varying flow conditions at Mollys Falls Reservoir;
    viii. information on how the Facility will be managed to avoid non-compliance events with the requirements for the NOL and the winter drawdowns at Peacham Pond, as described in Section III.A;
    ix. a detailed protocol for deciding when and how the Facility will be managed in the event of winter drawdowns exceeding 6.6 feet (or 3 feet, as applicable) at Peacham Pond, as described in Section III.A(5);
    x. determination of the specific New NOL in Molly's Falls Reservoir and information on how the Facility will be managed to avoid non-compliance

events with the requirements for the New NOL and the winter drawdowns at Molly's Falls Reservoir, as described in Section III.C;

xi. a detailed protocol for deciding when and how the Facility will be managed in the event of winter drawdowns exceeding 2 feet (or 5.8 feet, as applicable) at Molly's Falls Reservoir, as described in Section III.C(4);

xii. a mutually agreeable water-level trigger for releasing generation flows to the Winooski River, as described in Sections III.E(3)(ii) and III.H(3)(ii);

xiii. information on how the Facility will be managed to avoid non-compliance events with the requirements for temperature and dissolved oxygen in the Winooski River, as described in Sections III.F and III.G; and

xiv. the testing results verifying the range of the turbine's hydraulic capacity for safe operations (the "Permitted Operating Zone"), as described in Section III.E(4)(i).

2. No later than October of each of the first three (3) years following completion of construction of the Revised Project, GMP and ANR shall meet and confer to review the status of operations at the Facility, to discuss challenges and successes in implementing the operating protocols and conditions described herein and in the Flow and Water Level Management and Monitoring Plan, and to identify opportunities for improvement.

3. In the development of the Flow and Water Level Management and Monitoring Plan, GMP and ANR may agree on additional circumstances and conditions under which GMP may generate power and release generation flows to the Winooski River between April 1 and October 31, as referenced in Section III.E(3).

    i. GMP and ANR may agree that the rate of change in the water level of Molly's Falls Reservoir is a reasonable and appropriate surrogate for the magnitude of flows in the Winooski River measured from the powerhouse. GMP and ANR will work to understand the relationship between water levels in Mollys Falls Reservoir, generation flows, and generation run-time. In the event that GMP and ANR agree on a surrogate for the magnitude of flows in the Winooski River, the Flow and Water Level Management and Monitoring Plan shall detail the specific approach and the calculations that support the use of the surrogate. In the event that GMP and ANR do not agree on a surrogate, none shall be described in the Flow and Water Level Management and Monitoring Plan.

    ii. GMP and ANR agree that the water level of Mollys Falls Reservoir represents a reasonable and appropriate trigger for GMP to generate power and release generation flows to the Winooski River, irrespective of flows in

the Winooski River or inflow rates to Mollys Falls Reservoir. Once GMP and ANR agree on a water-level trigger, the Flow and Water Level Management and Monitoring Plan shall detail the specific approach and the calculations that support the use of the mutually agreeable water-level trigger. Unless GMP and ANR agree otherwise, the water-level trigger shall be (a) 1 foot above the New NOL between August 1 (or the date that the Agency determines that loon nesting is complete at Mollys Falls Reservoir, whichever is earlier) and April 30, and (b) 0.5 feet above the NOL between May 1 (or the date of refill to the Mollys Falls Reservoir New NOL, whichever is later), and July 31 (or the date that the Agency determines that loon nesting is completed at Mollys Falls Reservoir, whichever is earlier).

4. Within 6 months after the Commission approves the Revised Project, GMP shall submit the Flow and Water Level Management and Monitoring Plan to the ANR for comment, and thereafter to the Commission for review and approval. GMP shall implement the Flow and Water Level Management and Monitoring Plan upon completion of construction of the Revised Project or upon Plan approval by the Commission, whichever is later.

I. Operations and Maintenance Plan

1. GMP shall develop and implement an Operations and Maintenance Plan ("O&M Plan"), which will be prepared and maintained by GMP to detail information on the operational plans for the Facility's components including:
    i. operation of the spillways during a flood or high water event;
    ii. the surveillance and monitoring plan for the Facility; and
    iii. the plan for routine Facility maintenance.

2. The existing Marshfield Emergency Action Plan ("EAP", December 2018) information will be updated to reflect the Revised Project including the service spillway vertical slide gates, penstock bypass valve, and any operational changes that relate to operations during an emergency event.

3. Any Critical Energy Infrastructure Information ("CEII") contained in the O&M Plan shall be handled by GMP in accordance with applicable federal or state requirements. The parties will identify and implement a procedure and schedule by which ANR may review the O&M Plan or portions thereof that contain CEII.

J. Control of Water Plan

1. GMP shall develop and implement a water management and safety plan for the construction of the Revised Project. The Control of Water Plan will protect the contractor and work area during construction and provide GMP the flexibility to pass

flows if necessary during the construction phase.

2. Within 6 months after the Commission approves the Revised Project, GMP shall submit the Control of Water Plan to ANR for comment, and thereafter to the Commission for review and approval.

IV. The Parties agree that, subject to the Commission including the conditions of Section III in its approval of the Revised Project, the Revised Project will serve the public good, and will have no undue adverse effect to scenic and recreational values; fish and wildlife; forests and forest programs; existing uses of the waters by the public for boating, fishing, swimming, and other recreational uses; the creation of any hazard to navigation, fishing, swimming, or other public uses; the creation of any public benefits; the classification, if any, of the affected waters under 10 V.S.A. Chapter 47; and compliance with applicable State, regional, or municipal plans; pursuant to 10 V.S.A. § 1086.

V. The Parties agree that the Commission may approve the Revised Project and issue an Order and CPG in this matter in accordance with the plans and specifications submitted with the Application, as modified by the supplemental prefiled testimony and exhibits that are specified in this MOU, and including the terms and conditions of this MOU. The Parties agree that to the extent any testimony or evidence submitted in this proceeding differs from the provisions of this MOU, the provisions of the MOU shall control.

VI. This MOU may be modified only upon mutual written agreement by the Parties and is subject to any necessary Commission approvals.

VII. The Parties agree that this MOU shall not be construed by any party or tribunal as having precedential impact on any future proceeding involving the Parties, except as necessary to implement this MOU or to enforce an order of the Commission resulting from this MOU.

VIII. Nothing in this MOU shall bind the Parties to take or refrain from taking any position on any issue not addressed herein, including any issue raised by any other party to this docket, or in any future docket.

IX. This MOU is expressly conditioned upon the Commission's acceptance of all of its provisions, without material change or condition. The Parties agree that, should the Commission fail to approve this MOU in all material aspects, the Parties' agreements set forth herein shall terminate, this MOU shall not constitute any part of the record in this proceeding, and this MOU shall not be used for any other purpose. The Parties' agreements in this MOU shall not be construed by any party or tribunal as having precedential impact on any testimony or positions that may be advanced in these proceedings. Each Party shall be placed in the position that it enjoyed in this proceeding before entering into the MOU and shall have the right to submit filings in this docket, including testimony.

X. Any disputes arising under this MOU shall be resolved by the Commission under Vermont law.

XI. Provided that the Proposal for Decision is consistent in all material respects with this MOU and contains conditions substantially similar to those set forth in this MOU, the Parties hereby waive their rights under 3 V.S.A. § 811 to review and comment upon a Proposal for Decision with respect to the issues addressed herein. Notwithstanding the above, ANR or GMP may submit comments in response to any comments submitted by other parties in the proceeding, provided such comments are consistent with the intent and terms of this MOU.

[*Signatures pages follow.*]

Dated at Burlington, Vermont, this 8th day of August, 2019.

GREEN MOUNTAIN POWER CORPORATION

By: _____

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Dated at Montpelier, Vermont, this 8th day of August, 2019.

VERMONT AGENCY OF NATURAL RESOURCES

By: _____

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Attachment A: Reservoir Drawdown & Refill Criteria

I. Criteria for Drawdown below 1,398.9′ (Peacham Pond) or 1,222.0′ (Mollys Falls Reservoir)

A. The following criteria and conditions shall apply in the following circumstances:

1. **When drawing down Peacham Pond 3.0′ to 6.6′ below NOL (i.e., 1,398.9′ to 1,395.3′ NGVD29 based on a NOL of 1,401.9′),**
2. **For exemptions from requirement to stage Peacham Pond or Mollys Falls Reservoir drawdowns to no more than 6 to 12 inches per week prior to December 15, and**
3. **For drawing down Mollys Falls Reservoir 2′ to 5.8′ below *the new* NOL (i.e., approximately 1,222.0′ to 1218.2′ NGVD29 based on a new NOL of approximately 1,224.0).**

B. GMP will conduct drawdowns subject to these criteria and conditions (see also Notes 1 and 2 below):

1. **Mollys Falls Reservoir:**

    1) Generating unit is expected to be out-of-service for extended time or other maintenance/repair work, or
    2) Any one or more of the following critical components of the Facility requires planned or emergency maintenance: intake, gatehouse, penstock, surge tank, primary spillway, emergency spillway, and any/all areas of the dam, or
    3) Peacham Pond cannot be drawn-down normally, or
    4) Snow-Water Content exceeds 6 inches at any time, or
    5) Snow-Water Content exceeds 4.5 inches after April 1, or
    6) Forecast indicates over 2.5 inches of rain is likely within 24 hours, or
    7) Forecast indicates over 3 inches of rain is likely within 48 hours, or
    8) Forecast indicates over 3.75 inches of rain is likely within 72 hours, or
    9) Hydrologic forecasting indicates full gate operation or emergency spillway activation is likely to be needed

2. **Peacham Pond:**

    1) Mollys Falls Reservoir cannot be drawn-down normally or other maintenance/repair work, or
    2) Snow-Water Content exceeds 7 inches at any time, or
    3) Snow-Water Content exceeds 4.5 inches after April 1, or
    4) Forecast indicates over 2.5 inches of rain is likely within 24 hours, or
    5) Forecast indicates over 3 inches of rain is likely within 48 hours, or
    6) Forecast indicates over 3.75 inches of rain is likely within 72 hours, or
    7) Hydrologic forecasting indicates full gate operation or emergency spillway activation is likely to be needed

Notes:

1) Reservoir level may temporarily rise above the NOL during high inflow events and GMP would use generation and/or gate operations to restore NOL while managing flow releases to reduce excessive downstream flows.

2) Pre-approval by ANR is not required for GMP to conduct drawdowns below 1,398.9′ (Peacham Pond) or 1,222.0′ (Mollys Falls Reservoir). GMP will monitor and record all applicable data.

II. Criteria for Additional Drawdown below 1,395.3' (Peacham Pond) or 1,218.2' (Mollys Falls Reservoir)

A. The following criteria and conditions shall apply in the following circumstances:

1. **for drawing down Peacham Pond more than 6.6' below NOL (i.e., lower than 1,395.3' NGVD29 based on a NOL of 1,401.9'), and**
2. **for drawing down Mollys Falls Reservoir more than 5.8' below *the new* NOL' (i.e., lower than approximately 1,218.2' NGVD29 based on a *new* NOL of approximately 1,224.0). This is equivalent to a drawdown of more than 6.6' in Peacham Pond, and more than 10' below *the historic (current)* NOL in Mollys Falls Reservoir.**

B. GMP will conduct drawdowns subject to these criteria and conditions (see also Notes 1 and 2 below):

1. **Mollys Falls Reservoir:**

    1) Generating unit is expected to be out-of-service for extended time or other maintenance/repair work, or
    2) Any one or more of the following critical components of the Facility requires planned or emergency maintenance: intake, gatehouse, penstock, surge tank, primary spillway, emergency spillway and any/all areas of the dam, or
    3) Peacham Pond cannot be drawn-down normally, or
    4) Snow-Water Content exceeds 10 inches at any time, or
    5) Snow-Water Content exceeds 5 inches after April 1, or
    6) Forecast indicates over 3 inches of rain is likely within 24 hours, or
    7) Forecast indicates over 4 inches of rain is likely within 48 hours, or
    8) Forecast indicates over 5 inches of rain is likely within 72 hours, or
    9) Hydrologic forecasting indicates full gate operation or emergency spillway activation is likely to be needed

Peacham Pond:

1) Mollys Falls Reservoir cannot be drawn-down normally or other maintenance/repair work, or
2) Snow-Water Content exceeds 10 inches at any time, or
3) Snow-Water Content exceeds 6 inches after April 1, or
4) Forecast indicates over 3 inches of rain is likely within 24 hours, or
5) Forecast indicates over 4 inches of rain is likely within 48 hours, or
6) Forecast indicates over 5 inches of rain is likely within 72 hours, or
7) Hydrologic forecasting indicates full gate operation or emergency spillway activation is likely to be needed

Notes:

1) Reservoir level may temporarily rise above the NOL during high inflow events and GMP would use generation and/or gate operations to restore NOL while managing flow releases to reduce excessive downstream flows.

2) Pre-approval by ANR is not required for GMP to conduct drawdowns below 1,395.3 (Peacham Pond) or 1,218.2' (Mollys Falls Reservoir). GMP will monitor and record all applicable data.

III. Refill Timing: Both Reservoirs

1. Complete refill by May 1 each year, or sooner/later as feasible based on actual conditions. Criteria for delaying Reservoir Refill Completion past May 1:
    1) Mollys Falls Reservoir
        a) Snow-Water Content exceeds 5 inches after April 1
    2) Peacham Pond
        a) If ice is present on reservoir surface, water level shall not rise higher than normal full level minus 4 feet (balance of refill to commence once surface is ice-free); or
        b) Snow-Water Content exceeds 6 inches after April 1

IV. Existing Loon Protocols: Both Reservoirs

1. Prior to loon nesting season, GMP manages pond levels as close to normal operating levels (NOL) as is feasible and safe, in anticipation of loon nesting season. Maintaining water levels as close to NOL as is feasible and safe, means maintaining water levels within 0.5 ft above or below the NOL, due to effects of changing flows, wind, waves, sensor accuracy, and sensitivity of level-controls.
2. Loon nesting season will commence when either local Loon volunteer or VT Center for Ecostudies (Eric Hanson) notify GMP Control Center or local GMP field personnel (Power Production Workers or "PPW") that loons are on their nest, or GMP PPW observe loons on their nest and notify GMP Control Center.
3. Upon confirmation that loons are nesting, PPW site visit frequency shall increase to adjust water level/valve more frequently to manage pond levels as stable as is feasible and safe during loon nesting period.
4. Pending water level/flow status, slight to moderate storm events may raise pond levels, so in anticipation of a weather event, the valve shall be adjusted to manage water to the best of GMP's ability.

Attachment B: Ramping Criteria

I. Criteria for Ramping Generating Flows Up and Down Using Existing Infrastructure:

A. Flow releases would ramp-up from 0 cfs to 103 cfs (minimum for generation) within 30 minutes as follows:

1) The existing turbine-bypass-pipe valve ("valve") would ramp-up from 0 cfs to 40 cfs over 28 minutes.

2) Valve up-ramping would be comprised of 28 steps in which the flow would increase by approximately 1.4 cfs over a 2-second pulse, occurring every 1 minute.

3) Flow would be transitioned from the 40-cfs maximum valve capacity to the 103-cfs turbine minimum capacity in two minutes, with the valve being closed simultaneously with the turbine starting flow, this method will ensure flow releases continuously are at least 40 cfs but not above 103 cfs.

B. Once the turbine is generating at 103 cfs, it would either ramp-up to the maximum allowed seasonal capacity, or remain at 103 cfs depending on the time of year, inflow, etc. (refer to Attachment C for Generation Flow-Triggers). Ramping above 103 cfs would be as follows:

1) April-October: 103 cfs to match inflow (up to max 173 cfs capacity) – 60 cfs per hour rate of increase

2) November-March: 103 cfs to 135 cfs (or to match inflow if higher) within 30 minutes

C. Down-ramping: At the end of a generation cycle, the turbine would ramp-down to 103 cfs within 120 minutes, if needed. Once at 103 cfs, flow would then be transitioned to 40 cfs being released via the bypass valve within 2 minutes, and the valve would be down-ramped to 0 cfs over 28 minutes in the reverse sequence as at startup.

D. Ramping would not be required in the following circumstances:

1) Emergency shutdowns, plant trips (unit trips off-line to protect mechanical/electrical equipment)

2) Grid outages

3) Grid emergency or capacity scarcity events (ISO or local grid) as described in Section I of Attachment C

4) High natural flows: Mainstem Winooski River flow > 85 cfs at Powerhouse

5) Forecasted High flow weather events as described in Section II of Attachment C

Attachment C: Generation Flow-Trigger Criteria

I. Energy-related Emergencies under Section III.E.4.iii:

Energy grid emergencies and capacity scarcity events in the regional (ISO-NE) or Local Grids are described as follows:

A. Local Grid is specific to the VELCO Hardwick, Morrisville, and Marshfield circuits

B. Abnormal condition on local transmission lines or injection points (power in/out). Examples of this condition are unstable system, transmission or local system in weakened state that impacts Hardwick, Morrisville Water and Light, or GMP system in this region. GMP's Local Control Center (Colchester) will call on the Molly's Falls Facility to run for voltage control to stabilize the local grid. This occurs 1-2 times a year, duration could be 2-4 hours or up to 24 hours.

C. Similar to the 1998 Ice Storm or 2011 Tropical Storm Irene-type events, situations during which the regional transmission grid is cut off from the Marshfield area: once circuits are sectionalized the Molly's Falls Facility can provide localized power to the immediate area for emergency services, comparable to a microgrid system. In anticipation of these extended and catastrophic events, local hydro (and battery storage) sites such as the Molly's Falls Facility will become more critical for GMP to serve our customers and the local communities impacted.

II. Forecasted high-flow weather events under Sections III.A., III.C, and III.E.4.ii

A. Preventative reservoir water level management for forecasted high-flow events, which are defined by the same criteria for additional drawdown described in Sections I and II of Attachment A)

    1) Example of situation when preventative water level management would be needed: the day before TS Irene, estimated daily mean incoming Winooski River flow was 6.5 cfs at station W-1. The next day it was 378 cfs and the reservoir was 3 feet over the top of the service spillway stoplogs.

B. High reservoir water levels (generation and water passage needed to prevent service or emergency spillway activation)

    1) Pursuant to the Emergency Action Plan for the Facility, if water levels in Mollys Falls Reservoir are expected to rise above 1,228.64 ft NGVD29 (536.50 ft local), GMP shall generate at full capacity.

C. Reservoir level in Peacham Pond or Mollys Falls Reservoir may temporarily exceed 1 foot above the NOL during high inflow events; in such circumstances, GMP would use generation and/or gate operations to restore NOL while managing flow releases to reduce excessive downstream flows.